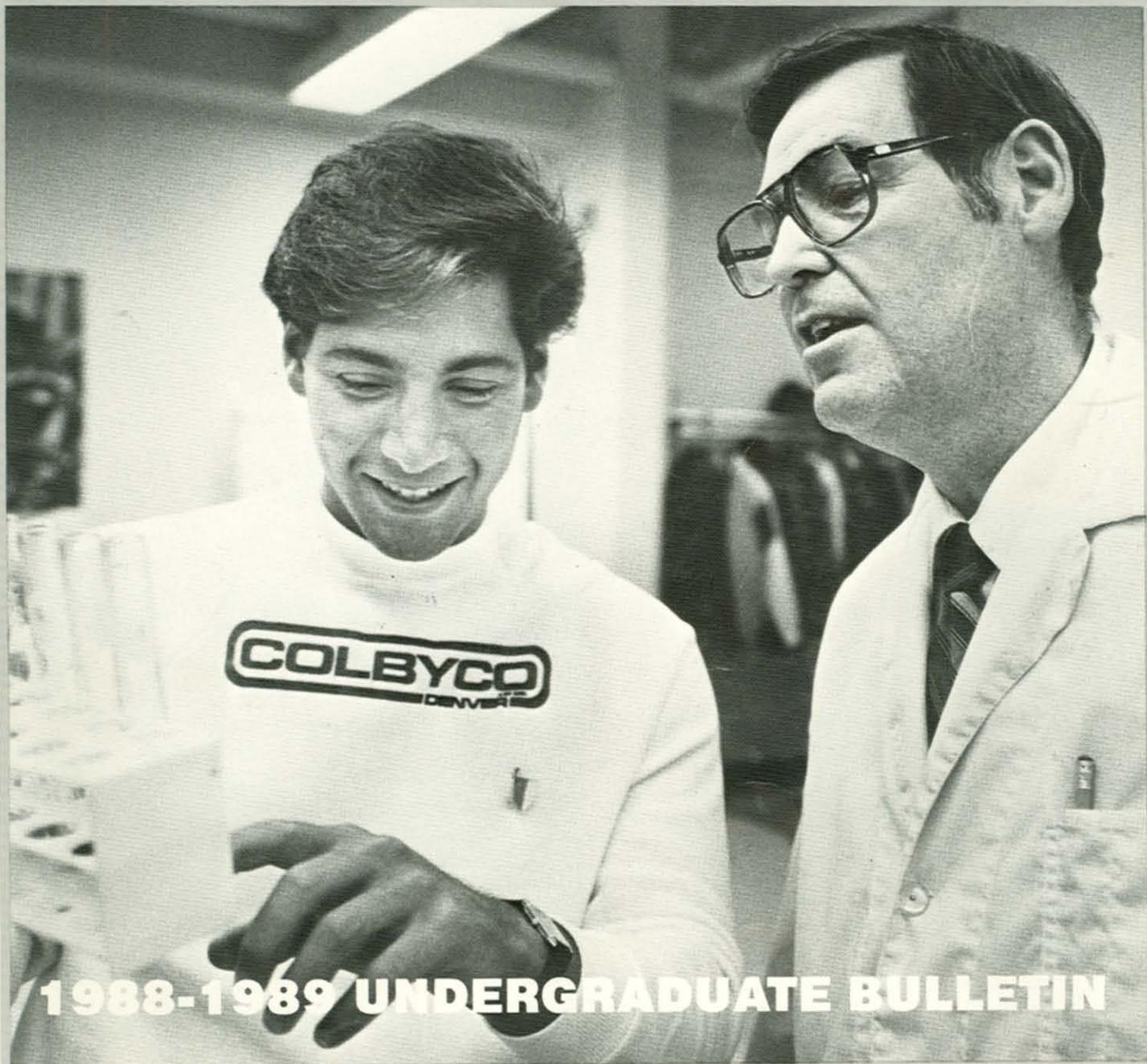




UW-Stout



1988-1989 UNDERGRADUATE BULLETIN



Undergraduate Bulletin

Catalog of Courses 1988-89

University of Wisconsin-Stout

Menomonie, Wisconsin 54751

Volume 65

**AN EQUAL OPPORTUNITY AND
AFFIRMATIVE ACTION UNIVERSITY**

North Central Association of Colleges and Secondary Schools
National Council for Accreditation of Teacher Education

While this bulletin was prepared according to the best information available as of May 1987, all information regarding fees, admission, graduation requirements and course offerings is subject to change.

For information concerning the University or any of its programs, write to: Director of High School Relations, University of Wisconsin-Stout, Menomonie, WI 54751. Telephone (715) 232-1232.

CONTENTS

3 GENERAL INFORMATION

- 4 Admissions
- 10 Special Programs
- 7 Financial Information
- 8 Housing Information
- 6 Scholastic Standards
- 8 Services to Students

13 PROGRAMS OF STUDY

13 INDUSTRY AND TECHNOLOGY

- 13 Applied Technology
- 17 General Business Administration
- 19 Industrial Technology
- 25 Marketing Education
- 27 Technology Education
- 28 Vocational, Technical and Adult Education

29 HOME ECONOMICS

- 29 Child Development and Family Life
- 32 Clothing, Textiles and Design
- 34 Dietetics
- 37 Early Childhood Education
- 39 Fashion Merchandising
- 41 Food Service Administration
- 43 Home Economics in Business
- 45 Home Economics Education
- 47 Home Economics General
- 49 Hotel and Restaurant Management

51 LIBERAL STUDIES

- 51 Applied Mathematics
- 55 Art
- 58 Art Education

59 EDUCATION AND HUMAN SERVICES

- 59 Psychology
- 61 Vocational Rehabilitation

65 SPECIALIZATIONS

- 66 Craftsmanship
- 67 Futures Studies
- 68 International Studies
- 70 Inventing
- 71 Training and Human Resource Development

72 MINORS

Aging Family	Journalism
Art	Mathematics
Aviation/Aerospace	Physics
Biology	Property Management
Business Administration	Psychology
Chemistry	Sociology
Coaching	Speech
Computer Science	Technical Writing
Economics	Tourism
English	Traffic Safety
Food Technology	Women's Studies
History	

74 COURSE DESCRIPTIONS

- 74 Industry and Technology
- 87 Home Economics
- 95 Liberal Studies
- 110 Education and Human Services

116 FACULTY, ACADEMIC STAFF AND EMERITI

GENERAL INFORMATION

TO NEW STUDENTS

Welcome to Stout! This bulletin was prepared with you in mind. It includes information you need in reaching your decision to attend Stout. It describes major programs offered by the University and includes course descriptions. Fee, financial aid and housing information is also provided. You are invited to visit the campus. Discussions with staff members may be helpful in reaching your decision. If possible, write or call for an appointment to visit Stout. The number is (715) 232-1232.

THE UNIVERSITY

Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1893 by James H. Stout. A Menomonie industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, Stout has gained a position of national leadership in industrial, vocational and home economics education. Its programs in those fields are among the largest in the world. Although Stout is a career-oriented university, it has had the foresight to make the humanities and social sciences key parts of the total educational program.

MISSION

As a basic step in the development of the newly merged University of Wisconsin System, in 1973, the Board of Regents adopted a broad mission for the System; a more specific one for the group of 11 institutions designated the University Cluster; and an individual mission statement for each university. Within the UW System, Stout is a Special Mission University. As such, it has one of the most specific missions found in universities. It provides for service to Wisconsin through focused universitywide programs in special mission areas.

STOUT'S SPECIAL MISSION

The University should offer focused undergraduate institutionwide programs relating to professional careers in industry, technology, home economics, applied art, teacher education and the helping professions with the goal of meeting statewide needs for specialized curricula in these areas.

The University should offer selected basic graduate programs in its special mission areas.

The University should provide transdisciplinary programs which center upon the study of human development and interpersonal relationships, efficient practices of people in industry and education, and the relationship of individuals to technology, vocation and society.

The University programs will include a core of liberal arts to enhance, add meaning to, and provide a foundation for the specialties of this University rather than offer programs with majors in the traditional arts and sciences.

The University should experiment with new educational strategies and instructional technologies in the interest of improving the learning process.

The University should develop appropriate interinstitutional relationships within the region and state and with the Wisconsin Vocational, Technical and Adult Education system.

THE FACULTY AND ACADEMIC STAFF

Expertise in teaching is the concern of the faculty, the administration and the students. Because Stout has specialized in certain areas, a staff comprised of individuals nationally recognized in their fields has developed. All classes are taught by the faculty and academic staff except for a small number of laboratory courses which are taught by highly qualified graduate assistants. The student-teacher ratio is about 20-1 overall. Of a staff of 450, a high percentage hold doctorates while others hold special degrees in their fields. The faculty's commitment to provide extra help to students is one of Stout's proudest traditions.

FACILITIES

Modern and well-equipped facilities mark Stout's 118-acre campus. Seven major classrooms and laboratories have been constructed or extensively remodeled since the early '70s. In addition, a new Library Learning Center and a new Student Center have been constructed since 1981.

Stout is proud of its laboratory intensive programs. More than 40 laboratories, encompassing more than 150,000 square feet, are available for study and research in the areas of electronics, power, industrial management, industrial design, industrial graphics, packaging, plastics, metals and woods. A newly remodeled fa-

cility providing laboratories for communication technologies was opened in January 1987.

A Home Economics building, opened in 1973, offers advanced research and laboratory facilities in the areas of food science and nutrition, dietetics, food service administration, hotel and restaurant management, interior design, fashion merchandising, clothing and textiles design, child development and family life, and home economics education.

The Applied Arts Center houses one of the finest collections of studio and laboratory space in the Midwest, specifically designed to support programs in art, industrial design and interior design.

The newly remodeled Stout Vocational Rehabilitation Institute is a model facility. Research and practicum experience in work evaluation, placement services and professional assessments of clients referred by state agencies are among the many professional activities conducted by faculty, staff and students.

Located in the center of the city of Menomonie, adjacent to the downtown business district and Lake Menomin, Stout offers an attractive, convenient and accessible campus setting.

STUDENTS

In terms of enrollment, Stout is not a local or state school. Its 7,300 students come from 30 or more states in the nation and 35 foreign countries. Students have a major voice in the affairs of the University and sit on important University committees. Besides regular and informal meetings with students, the University's Chancellor has "an open door policy." More than \$250,000 in student activity funds are administered by student government. There are more than 100 student clubs and organizations on campus, including national fraternities and sororities.

THE COMMUNITY

Located in scenic western Wisconsin, Menomonie has a population of approximately 13,000. The area's abundance of natural beauty, with numerous lakes, rivers and hills, provides many year-round recreational and sports opportunities. At the same time, major entertainment and cultural activities are available on campus, in the community and in the Twin Cities, about an hour away.

ADMISSIONS

Application for admission forms may be obtained by writing the Director of Admissions at Stout or from any Wisconsin or Minnesota high school guidance office. Although there are general guidelines, each applicant is considered on an individual basis.

UW SYSTEM ADMISSION POLICY

Freshman applicants must satisfy the following minimum requirements to be considered for admission:

1. Graduation from a recognized high school or equivalent.
 - (A) A recognized high school is one which either (1) is accredited by a regional accrediting association or state university or, (2) is recognized or accredited by a state department of public instruction or its equivalent.
 - (B) An applicant who has not graduated from a recognized high school must provide evidence of satisfactory completion of the requirements for a high school equivalency certificate or a diploma from a recognized high school, school system or state department of public instruction based on the General Education Diploma (GED) examination, the Wisconsin high school equivalency examination or other established criteria.
2. A minimum of 16 high school credits. At least 14 academic credits, which may be distributed in any manner, must be from English (including speech), mathematics, social science, natural science and foreign language; two additional credits in the above areas and/or in the arts, computer science or other academic areas are required. A high school credit represents a norm of five class periods per week in one field of study for a school year of 36 weeks.

An applicant who has not graduated from a recognized high school must provide evidence of ability to begin college work. Such evidence may include General Education Development test scores or a high school equivalency examination or other established criteria, transcripts of course work completed in high school, high school rank-in-class before leaving, written recommendations, ACT/SAT scores or other evidence deemed appropriate by the University. High school equivalency applicants may not normally be enrolled unless they are a minimum of two years past their expected date of high school graduation.

Any institution may conditionally or fully admit applicants who lack the stated requirements but are deemed to merit special consideration.

The UW System admissions policy shall provide that the American College Test (ACT) is to be required of all freshmen entering a campus of the University of Wisconsin System effective in fall, 1989.

Any institution may waive the admission test requirement for freshmen applicants who require special and unique exemption.

3. Applicants who do not qualify according to the above requirements may appeal for special consideration through the Director of Admissions.
4. Requirements for out-of-state students will be the same as those for resident students except that a unit may adopt special requirements for foreign applicants. If the number of qualified out-of-state students exceeds the ability of the unit to accommodate them, the unit shall determine the criteria for selection from among qualified applicants.

NEW FRESHMEN

High school students should apply for admission early in their senior year. Applications are accepted by the University as early as Oct. 1. There is no deadline for applications. However, because of enrollment limitations, a student who applies early may gain some advantage in admissions and in securing housing and financial aid.

STOUT ADMISSIONS POLICY

Freshmen applicants must satisfy the following minimum requirements to be considered for admission:

1. Graduation from a recognized high school or the equivalent.
 - A. A recognized high school is one which either (1) is accredited by a regional accrediting association or a state university, or (2) is recognized or accredited by a state department of public instruction or its equivalent.
 - B. An applicant who has not graduated from a recognized high school must provide evidence of satisfactory completion of the requirements for a high school equivalency certificate or a diploma from a recognized high school, school system, or state department of public instruction based on the GED examination, the Wisconsin High School

Equivalency Examination or other established criteria.

2. A minimum of 16 high school credits with the following distribution are required.
 - A. Four credits of high school English, including speech;
 - B. Two credits of high school mathematics;
 - C. Two credits of high school science;
 - D. Three credits of high school social science;
 - E. 1.5 credits of high school physical education; and
 - F. 3.5 credits of other academic credits.

A high school credit represents a norm of five class periods per week in one field of study for a school year of 36 weeks.

3. Evidence that the applicant is prepared to do satisfactory work at Stout.
 - A. High school class rank at graduation in the upper 75 percent.
 - B. The American College Test (ACT) is required of all freshmen. Non-resident student applicants may submit SAT scores in lieu of results from the ACT.
4. Applicants who do not qualify according to the above requirements may appeal for special consideration through the director of Admissions.

Deferred Admission Students who desire to work for a few years or enter military service may process an application for admission now to gain contact with Stout in the event an opportunity for part-time study arises elsewhere. This will enable the student to check on the transferability of course work and at the same time, keep posted on pertinent changes at Stout.

TRANSFER STUDENTS

Transfer students should apply for admission and forward an official transcript early in October for admission the following fall. Tentative admission can be given after a preliminary evaluation of transfer credits. An early application for admission permits registration for classes and financial aid clearance. Since enrollment limitations have made it necessary to deny some students each year, early planning and applications are important.

Two-Year UW Centers and Accredited Colleges and Universities Normally, students with an overall "C" average at their previous institution(s) can be admitted. Students with less than a "C" average can be admitted under certain circumstances

and should consult with the director of Admissions for an evaluation. The University of Wisconsin System policy allows a maximum of 72-semester credits to transfer from two-year centers.

UW CENTER SYSTEM TRANSFERS

Stout has established a credit transfer system with UW Center System schools. For each degree program at Stout, a list of courses at Center System schools and equivalent courses at Stout is available. Center System counselors assist students who desire to transfer to Stout to select appropriate Center System course work. Students who complete one of these equivalency programs may have confidence that their work at the Center System school will be accepted on the appropriate degree program as equivalent credit at Stout. Center System students who plan to transfer to Stout should make application in October for admission in the following fall semester. Usually, students can take at least one year of study at a Center System campus—in some cases two—before transferring to Stout.

VOCATIONAL, TECHNICAL AND ADULT EDUCATION INSTITUTES

Degree Program Completion Systems Stout recently completed a credit transfer system in cooperation with Madison Area Technical College, Milwaukee Area Technical College and Nicolet College. Course sequences for each of Stout's bachelor's degree programs are tailored from course work at each of these three institutions and can be transferred to Stout with the knowledge that satisfactory course completion will result in equivalent, useful credit applicable to the specified degree program. Counselors at each of these institutions assist students in their course selection. Students in any one of these programs who desire transfer to Stout are encouraged to apply in October for admission the following term.

Non-College Parallel Program Stout will accept selected credits outside the college parallel program as long as a direct linkage can be shown between those courses and the student's program area of study at Stout. General education or liberal arts courses taken outside the college parallel program will not usually transfer. However, the student will be given every opportunity to earn credit by examination in those areas. A student transferring from a non-parallel program must complete an application for admission and forward official transcripts from the last institution attended.

INTERNATIONAL STUDENTS

It is recommended that all potential international students have better than average academic records.

At the Freshman Level (first year) Students must send documentation consisting of certified copies of certificates, diplomas or degrees earned. These official records must be equal to U.S. high school (secondary education) graduation for consideration.

At the Transfer Level Post-secondary records must be certified correct by the former institution attended. All certified records must show courses taken and grades earned. No advance credit will be given unless the record shows evidence of satisfactory completion of the course being considered. Any alterations or irregularities in these records will result in the student being denied admission.

Initial transfer of credits is provisional and must be validated by satisfactory work in residence.

Additional records presented after the student has enrolled will not be considered for transfer.

English Language Requirement The Test of English as a Foreign Language (TOEFL) is required of students from all non-English speaking countries. The minimum score required is 500. For information on where and when to take the TOEFL, write to:

Test of English as a Foreign Language
Box 899
Princeton, New Jersey, USA 08540

Finances All international students must show evidence that they have adequate finances to undertake a degree program at Stout. As a condition of admission, international students whose sponsors have a history of delinquency in payment of fees, must place on deposit an amount approximately equal to the institution's non-resident tuition and fees for a 12-month period, which includes two semesters and an eight-week summer term. Applicants to whom this applies will be informed upon receipt of application. Questions about this policy may be addressed to the Business office or to the Office of International Programs.

EDUCATIONAL PLANNING AND PRIOR LEARNING ASSESSMENT

Stout works with Metropolitan State University of St. Paul to offer educational planning sessions designed to assist students and prospective students who would like to explore the possibility of receiving college credit for prior learning. Educa-

tional planning sessions are held as demand requires. Student participants in the educational planning session identify areas of collegiate learning, assemble documentation of learning to be assessed and develop a portfolio describing the learning to be evaluated. They prepare for assessment of specific subject areas identified in their portfolios. This information is provided to expert evaluators who conduct the assessment.

Metropolitan State University is the administrative agency through which evaluations occur. Approved college credits are transcribed by Metropolitan State University and may be transferred to other accredited universities, including Stout. For further information, contact the Office of Continuing Education at Stout.

ADULT SPECIAL STUDENTS OR VETERANS

Adults may be admitted even though they have not completed high school. An applicant who has not graduated from a recognized high school must provide evidence of ability to begin college work. Such evidence may include General Education Development test scores or a high school equivalency examination or other established criteria, transcripts of course work completed in high school, high school rank-in-class before leaving, written recommendations, ACT/SAT scores or other evidence deemed appropriate by the University. High school equivalency applicants may not normally be enrolled unless they are a minimum of two years past their expected date of high school graduation.

Any institution may conditionally or fully admit applicants who lack the stated requirements but are deemed to merit special consideration.

FALSIFICATION OF RECORDS

Students are expected to provide the University with accurate information concerning their past, personal and educational history. The University policy indicates that any students who intentionally falsifies or omits information given as part of his University record, becomes subject to automatic suspension.

SENIOR CITIZENS

Wisconsin citizens aged 62 and over may audit all classes at Stout free of charge if space is available. Others who do not wish to receive credit for courses taken may also audit courses by paying half of the normal fee.

SCHOLASTIC STANDARDS

STUDENT HANDBOOK

A Stout "Student Handbook" is issued annually to each student. The booklet contains helpful information related to academic information and campus policies, campus programs, rules and regulations, activities, organizations and services. It is an official document of the University and contains many of the details not found in the University catalog.

SEMESTER CREDIT

Credit is expressed in semester hours. A credit of one semester hour represents the satisfactory completion of the work of one recitation a week for a period of one semester. A course having five recitations a week will therefore give five semester hours of credit. In order to receive a degree, the student not only must gain the required number of credits in the course being pursued, but also must attain a certain standard of scholarship.

CREDIT REGISTRATION AND OVERLOAD POLICY

Courses are designed and graduation requirements are established so that a normal semester credit load is 16 or 17 credits. Students should only register for those classes they fully intend to complete. Students may not register for classes which conflict with other class(es).

Undergraduate students, with the exception of graduating seniors, will be restricted to 16 credits during the early registration. Once registration is completed, students may add credits up to a maximum of 20 during the add/drop period.

Students seeking a waiver of the 20-credit limit may appeal to their program director. If approved, the signed overload permit must be filed in the Registration and Records office each semester.

The maximum credit load for summer school for undergraduate and graduate students is one credit per week during the session(s) for which the student is enrolled. Courses in which the number of credits equals the number of weeks the course is offered precludes enrollment for additional credits during that time. Requests for an exception in special circumstances should be transmitted to the appropriate program director.

ADD/DROP POLICY

Careful planning should lead to schedules for students which are sound individual programs. The majority of students should not have a need for adding or dropping once classes start. Occasionally, conditions exist which do not permit students to carry through their course plans.

The following policy serves as Stout's procedures for adding or dropping classes:

Students are expected to complete courses for which they register. Students who wish to adjust their class schedules may add or drop classes before the end of the second week of semester classes and before the end of the first week of quarter classes. Drops made during the first two weeks of a semester course or the first week of a quarter course will not appear on a student's transcript. If students deem it necessary to reduce their program after the normal (two week) add/drop period, they should do so as early as possible. A mark of "WS" or "WU" is given by the instructor and recorded on the student transcript for a course dropped after the add-period of a semester or quarter course but before the midterm date. After the midterm date, any withdrawal from a course is recorded as an "F." If extenuating circumstances warrant other consideration, an appeal may be made to the instructor of the course. Students who register for a course but do not attend the class and do not officially withdraw are given a mark of "F." Students who do not attend the first class meeting of a course, or who do not notify the instructor or department chairperson that they will be absent for special reasons, may at the instructor's option, be dropped from the course if, and only if, other students are waiting to enroll at that time.

PROCEDURE FOR WITHDRAWAL FROM STOUT

Withdrawal should be undertaken only after serious consideration. Persons intending to withdraw must schedule an exit interview at the Student Services office and complete a withdrawal form. A student who fails to withdraw officially from the University will receive a grade of "F" in all courses being pursued. Withdrawals after the midpoint of a term or course will generally result in "F" grades. (See grading policy in Student Handbook.)

GRADE POINT AND SYMBOLS

Grade	Grade Points
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67

F	0.00
O	= Outstanding (no grade points)
S	= Satisfactory (no grade points)
U	= Unsatisfactory (no grade points)
W	= Withdrawal from school before midterm or grade assigned by registrar for improper drop
I	= Incomplete
CR	= Pass (no grade points)
F	= Fail
IP	= In Progress
AU	= Audit - no credit awarded
NC	= No Credit
WS	= Withdrawal - Satisfactory Work
WU	= Withdrawal - Unsatisfactory Work

SUSPENSION AND PROBATION

Grade point requirements for graduation vary by major selected. A lower grade point average than required by the major, although it may not result in probation or dismissal, cannot be construed as satisfactory progress toward a degree. Minimum acceptable standards for retention are defined as follows:

(1) First semester freshmen students will be placed on probation if they achieve a grade point average less than 1.8 at the end of the semester. They will be suspended if their grade point average is less than 1.00 at the end of the semester.

(2) Second semester freshmen will be placed on academic probation if their cumulative grade point average at the end of the second semester is less than 1.9. They will be suspended if their grade point average is less than 1.0 for the semester.

(3) A second semester sophomore or an upper division student will be placed on academic probation at the end of any semester in which the student's cumulative grade point average is less than 2.0; the student will be dismissed at the end of any semester in which the current grade point average is less than 1.0.

(4) A student with two consecutive terms of probation will be dismissed unless he or she has a current semester grade point average of 2.5 or higher.

A student who has been declared academically ineligible to continue may request a hearing to appeal.

REQUIREMENTS FOR GRADUATION

The semester credit hours required for graduation vary slightly with the major and are stated under the program of study for each major. The normal time required for the completion of these requirements is four years and results in the awarding

of the bachelor of science or bachelor of arts degree. Meeting the requirements for graduation is a responsibility of the student. To fill the minimum residence requirement, the last 32-semester hours of credit (64 grade points) must be earned in residence at Stout. Candidates for degrees are required to file an Application for Degree card with the Office of Student Records one semester prior to graduation.

GRADUATION WITH HONORS

In each graduating class, the selection of students for honors is based upon scholarship. Upon completion of a student's undergraduate work, a minimum cumulative grade average of 3.200 in 60 or more credits

must have been earned. The designations Cum Laude (3.2 - 3.499), Magna Cum Laude (3.5 - 3.799) and Summa Cum Laude (3.8 - 4.000) are used. For commencement purposes, the cumulative GPA earned at the end of the semester preceding the commencement ceremony will determine recognition at the commencement ceremony. However, honors will be officially determined at the time of final graduation checkout. A transfer student who has from 32 to 59.5 credits earned in residence will be considered for honors if the student's prior school(s) records met or exceeded the appropriate standard. Honors will be listed on the student's transcript and will appear on the diploma.

CHANCELLOR'S AWARD

Universities recognize many different kinds of achievement, all important parts of a total education. Since scholastic achievement is the basic purpose of higher education, academic excellence is acknowledged by the University through the Chancellor's Award. Undergraduate students who receive a semester grade point average of 3.5 or above on 12 or more credits qualify for the award.

FINANCIAL INFORMATION

Since the catalog must be prepared far in advance, all fees, room and food rates, and other charges are subject to change without notice. Students are expected to pay all fees according to the procedure outlined in the Student Handbook. Failure to pay fees may result in suspension. Stout offers an opportunity to pay fees in installments. This program requires \$200 plus any past due amount or total payment at registration, whichever is less. The balance is due in two equal monthly installments. The fees on the following schedule incorporate the usual student costs such as textbook rental, Student Center, student activity and health fees. However, the schedule does not include lab or material fees charged in some courses.

SEMESTER COSTS

Undergraduate fees are set by the University of Wisconsin Board of Regents and are subject to change. Semester fees for undergraduate students registered for 12 or more credits are:

Resident:	\$ 812.20
Minnesota Resident:	872.20
Non-resident:	2372.20

MINNESOTA STUDENTS

New students at Stout must submit a reciprocity application to Minnesota before the end of the intended semester. Approval takes up to four (4) weeks. If approved for reciprocity, the student will be charged at the Minnesota resident tuition rate. Applications are available at the Financial Aid office and the Office of Student Business Services. The State of Minnesota has indicated that "Reciprocity benefits will not be granted retroactively" and that "each student is responsible for the application process." Therefore, each new student must complete and mail a correct, signed and notarized application

prior to the last day of the semester. Apply early to avoid complications. Students that have been in attendance at Stout and have earned credits during the previous academic year will automatically have reciprocity renewed by the State of Minnesota.

SPECIAL INTEREST

Special interest students should inquire about the fee structure as it relates to them at the time of registration. Generally, a special interest student is an individual who does not expect to apply the earned credit toward a degree at Stout.

REFUND ON FEES

Withdrawal from semester courses generate refunds based on the following schedule: First week of classes, 100 percent; second week, 80 percent; third week, 60 percent; and fourth week, 40 percent. After the fourth week, there is no refund. Refunds for room and food service charges are based on the date of withdrawal.

UNPAID OBLIGATIONS

Failure to meet financial obligations is a serious matter. Therefore, unpaid obligations of any nature due and payable by a student to Stout constitute valid reason for suspension from the institution. Students will not be allowed to register or receive transcripts until delinquent accounts are brought up-to-date.

FINANCIAL AID

The primary purpose of financial aid is to provide assistance to financially needy students who, without such aid, would be unable to attend college.

The basic premise for all need-based financial aid programs is that the primary

responsibility for financing a student's education rests with the student and the student's family. The federal and state aid is intended to meet those educational costs which remain after the student's resources and a reasonable expected contribution from the student's parents have been taken into account. To determine student need and award aid consistently and fairly, parents and students are required to fill out a financial statement listing their income, assets and liabilities. Stout requires each applicant to complete an ACT Family Financial Statement (FFS). Stout also accepts the CSS Financial Aid Form (FAF). On the basis of this financial statement, the financial aid officer can determine the need, which is the amount parents and students can be expected to contribute subtracted from the cost to attend Stout for the year. Students are expected to contribute a portion of their assets as well as a standard expected savings (\$700 Freshman, \$900 Sophomore, Junior and Senior) from summer work.

Financial aid must be applied for annually. Financial assistance is awarded for the entire academic year. Each applicant is considered for all types of aid for which the applicant is eligible according to State and Federal regulation. Financial aid categories are grants, work or loans.

Financial Aid awards are based on full-time status, 12 credits or more. Students must consult with the Financial Aid office if planning to carry less than a full-time credit load as an adjustment will have to be made in the aid award.

Applicants are encouraged to submit financial statements by April 15 of each year. Applications received after that date are processed on a first come, first served basis. Applicants whose forms are in early are notified whether or not they are eligible for financial aid between June 1 and June 30.

Financial Aid counselors are available for consultation. Stop at the Financial Aid office, 210 Bowman Hall, if planning to visit the campus. Please call (715) 232-1363 or write for an appointment. More comprehensive information on financial aid is available on request from the Financial Aid office.

HOUSING INFORMATION

Residence hall living is a meaningful part of a student's life at Stout. With the help of a professionally trained staff, students achieve their goals through a variety of social, educational and recreational activities. The University provides residence hall accommodations for approximately 2,900 students.

UW System policy requires freshmen and sophomores (59 credits or less) to live in the residence halls as long as space is available. Exceptions are made for veterans, married students and students living with their parents.

Students may and are encouraged to apply for residence hall accommodations immediately after being accepted to the University. An application card for the residence halls accompanies the letter of acceptance sent to the student by the Admissions office.

Contracts for residence hall rooms are sent to the students in the order in which

applications for rooms have been received. Normally, students applying for residence hall space prior to March can be accommodated for the next academic year. A \$75 surety deposit is required with each contract. This deposit is applied against the final payment for the second semester. Rooms may be occupied the day prior to registration each semester. The contract is valid for the entire academic year.

Each room is furnished with two single beds and innerspring mattresses, dressers, study tables, chairs and bookcases. A touch-tone telephone is provided in each room. The rooms are approximately 11 feet by 15 feet and all rooms are carpeted. Radios, stereos and television sets are permitted in the rooms provided the students comply with the regulations for the use of this equipment. Television sets are also available for general use in the main lounge of each building. Small refrigerators are available on a rental basis.

All residence hall students contract for their meals with the Residential Dining Services. A wide variety of dining plans is available. Only microwaves and coffee pots, hot pots and popcorn poppers with unexposed elements are permitted in student rooms. Extensive cooking in student rooms is not permitted. Fully equipped kitchens are available in each residence hall.

The Stout Student Association office attempts to maintain a list of off-campus housing currently available. These are available upon request. Those planning to reside off campus may find it useful to visit Menomonie to secure the type of housing desired.

SERVICES TO STUDENTS

Services to Students serves to stimulate student development in all phases of life. Educational and developmental functions include tasks such as researching student needs; assisting students in assessing their own needs, potential, and development in their personal, academic and career areas; motivating students to develop a commitment to growth in all areas of life; and assisting students in the integration of formal and informal educational experiences.

NEW STUDENT ORIENTATION

A summer orientation and registration program provides new freshmen and their parents an opportunity to become better acquainted with the campus. During these scheduled one-day visits, parents become involved in a variety of orientation activities while students are provided with important information about degree programs, career opportunities and academic advisement in course selection. The students develop the fall semester class schedule. Transfer and re-entry students are also invited to campus during the summer to receive advisement and develop a class schedule. During the first few days of the fall semester, new students re-

ceive additional help through planned activities.

LEARNING RESOURCES

Learning Resources provides services to assist instructional communications and the learning process. This service is divided into four functional units.

The Library Learning Center has an integrated audiovisual and print resource collection consisting of 188,595 volumes; more than 1,436 periodicals, 7,120 audiovisual items and 651,973 microformats. An on-line catalog (ALIS) features computerized reference searching, circulation, acquisition purchasing, management data, and on- and off-campus access. An interspersed stack-seating arrangement of 1,060 user stations is featured. Specialized collections of national prominence in Stout's major fields of graduate study and a complete collection of ERIC (Educational Resource Information Center) documents on microfiche are maintained. On-line computerized literature searches for 300 specialized data bases are offered free of charge to students and faculty. The library is open 95 hours per week. A media self-instruction laboratory provides stu-

dents with facilities and equipment for learning media equipment operations and for producing basic audiovisual materials. A 50 work-station campus computing laboratory is available. The facility is equipped with microcomputers, a hard-disk server, printers and terminals connected to time-sharing computers. Microcomputers are also available for student use in the self-instruction laboratory.

Academic Computer Services provides time-sharing computer support for instruction and research. Resources provided include multiple language processors, customized software packages for selected courses, test-scoring and analysis, and several general statistical packages. A Digital Equipment Corporation VAX-11/780 computer is available to faculty and students for on-line computation, with 140 terminals located in all classroom buildings, the Library Learning Center and residence halls. An electronic switch allows the same terminals to access multiple computers in Academic Computing, the Library and the Technical Computer Services Center. Dial-up access is provided to the switch for service from remote sites with personal computers and

modems. All services are provided free for instructional support.

Instructional Technology Services is housed in the Communications Center. Professional media specialists provide Stout staff and students with consultation in areas of instructional development, media design, utilization, media equipment and facilities; production of still and motion picture photography, graphics, instructional television, and audio recording; and maintenance of most media equipment, computer terminals and microcomputers.

The Stout Teleproduction Center produces programs for broadcast on Channel 28 serving western Wisconsin and the Wisconsin Public Television Network, and for other state educational organizations and non-profit agencies.

STUDENT CENTER

The Memorial Student Center is intended to be the community center of the University for students, faculty, staff, administration, alumni and guests. As a member of the Association of College Unions International, the staff has close communications with other college student centers in an effort to share ideas that add to further the concept that a student center is a home away from home.

As the "livingroom," the Student Center provides for services, conveniences and amenities for members of the University community. It is a place for getting to know and understand one another through information association outside classrooms.

You are invited and encouraged to use the facility, services, programs and activities offered by the Memorial Student Center.

STUDENT ACTIVITIES

More than 100 student organizations and activities are represented on campus. They share a common purpose in providing opportunities which will help meet the extracurricular needs of students. Such diverse interests and organizations as band, dramatics, yearbook, newspaper, forensics, chorus, religion, politics, recreation, fraternities and sororities offer experiences which allow students to continually develop their interests. The University also has a complete recreation and intramural program for men and women.

ACADEMIC SKILLS CENTER

The Academic Skills Center offers services to any students at Stout interested in improving their reading, writing, spelling and study skills. A class, 421-280, Reading Improvement and Study Skills, is available; it is offered on a semester basis for two credits. In addition, students may come to ASC for individual academic ad-

visement. Support services are available for learning disabled students. Individualized self-instruction materials are available in the areas of reading, reading rate, memory, comprehension, spelling and vocabulary. Spelling instruction is offered each quarter in small groups. Phone inquiries may be made at Ext. 1381 or Ext. 1125.

In addition, the Center coordinates the Volunteer Tutoring Program, offering help in most classes on campus. Persons interested in volunteering to tutor or requesting a tutor should stop in at the Center. For further tutoring information, call Ext. 3086.

The Academic Skills Center is located in Room 201 of the Library Learning Center.

COUNSELING CENTER

Counselors are available to each University student to assist in deriving the maximum benefit from the student's university career. Counseling provides a means to continue growth in self-understanding and in understanding others. Many decisions regarding educational, vocational or personal-social choices can more effectively be made with the help of a counselor. Counseling, psychological testing, and an extensive college catalog and vocational information library are available, and use of the Center is voluntary and free of charge to Stout students. The vast majority of users of the services of the Center are experiencing "normal" kinds of concerns. Most students in the course of their college experiences will encounter some problems with which they could benefit from the help of an experienced, understanding person. The Center's hours are 8 a.m. to 4:30 p.m., Monday through Friday and evening counseling can be arranged. The Career/Educational Information Resource Center, the Non-traditional Student Drop-in Center and the Biofeedback Laboratory are open until 9 p.m., Monday through Thursday. Appointments to see a counselor may be made by calling Ext. 2468, or by directly contacting the Center.

VETERANS SERVICE

Special assistance is available to veterans by the Registration and Records office. This office provides veteran students with current information on veteran's affairs, coordinates special educational programs for veterans, and maintains liaison with the Veterans Administration, Department of Veterans Affairs, and the County Veterans Service Officers. All veterans receiving assistance must file the appropriate forms with this office to be officially certified to receive benefits.

STUDENT SUPPORT SERVICES—ASPIRE

ASPIRE is a federally funded program that provides support services to selected students. The project offers activities and programs to aid individuals in achieving academic success. Individual assistance and tutoring programs in academic areas, along with educational and career development activities and services for students with disabilities (including learning disabilities) are offered. Special programs for those experiencing academic difficulty are also available. ASPIRE staff includes a Reading/Writing Specialist, Study Skills Specialist, Tutor Coordinator, and Personal/Academic Advisers. Interested individuals should contact a member of the ASPIRE staff at Ext. 2995 or 2996. ASPIRE is located in Room 128, Bowman Hall.

ETHNIC SERVICES CENTER

The Ethnic Services Center is a support service offered to students of American ethnic minority backgrounds. Individual as well as group assistance is offered to these students and includes academic advising, personal counseling and career direction. Cultural programming is also a large part of the services offered. For more information, contact the Center at Ext. 1096 or Room 206, Bowman Hall.

STUDENTS WITH DISABILITIES

A variety of services, specialized equipment and information on accessibility is available for handicapped students. Students who may require specialized services are asked to contact the office as soon as possible before beginning classes. Call Ext. 1181.

INTERCOLLEGIATE ATHLETICS

The athletic program contributes to the total educational program of the University. It provides general educational values for the participants and provides a laboratory for those who are in the coaching certification program. Stout is a member of the Wisconsin State University Athletic Conference, the Wisconsin Women's Intercollegiate Athletic Conference, the National Association of Intercollegiate Athletics and the National Collegiate Athletic Association-Division III. The University sponsors seven women's and nine men's varsity teams. Women's teams include basketball, cross country, gymnastics, swimming, tennis, track and volleyball. Men's teams are baseball, basketball, cross country, football, golf, swimming, tennis, track and wrestling. The "S" Club is a campus organization for men and women who have earned letters in intercollegiate sports.

PLACEMENT SERVICE

The University maintains a full-time Career Planning and Placement service for all students and alumni. Staff members assist students in evaluating abilities and planning for the future. Placement of Stout graduates continues to be a major emphasis of the University. Three full-time Career Planning and Placement counselors are available. Career Days, campus recruitment, workshops and one-on-one counseling are just a few of the services. Statistical reports are available on the employment of past graduates.

SPECIAL PROGRAMS

Stout offers students opportunities to earn credits outside the classroom as well as in. Certain programs allow students to earn credit by examination. Field Experience and Independent Study should be investigated by students for the purpose of earning credit. These special programs and others are outlined below.

COOPERATIVE EDUCATION PROGRAM

Cooperative Education is an option within the curriculum at Stout. Currently, students in a variety of degree programs in the Schools of Industry and Technology, Home Economics, and Liberal Studies may be eligible to enroll. Co-op is a business/industry experience related to a student's academic program differing from field experience and internship as follows: (1) Alternating or parallel periods of classroom study and employment are possible, (2) A formal agreement is developed cooperatively by the instructor, student and employer, (3) Site experience is supervised, evaluated and paid, (4) Co-op entails recurring (more than one) work/study periods, each one building and expanding on the previous, (5) A more intensive involvement with business/industry is cultivated: Co-op is a "partnership" among the school, student and employer. Information on Co-op and the availability of Co-op job sites can be obtained from the Office of Cooperative Education or the assistant/associate dean's office housing the degree program.

BUSINESS AND INDUSTRY INTERNSHIPS

Business and industry internships are available through the school which provides the major. Some internships are of the summer type and only three months, while others are at least six-months long. The minimum requirements are usually stated as junior or senior standing, candidates are company screened and the position is para-professional. Contact any

school dean's office for details about the program in that school.

FIELD EXPERIENCE PROGRAM

Students are encouraged to obtain part of their college education off the Menomonie campus through the Field Experience program. This program allows students to receive academic credit for learning related to their major or minor, while employed in an approved off-campus field position. Most students use their summers to enroll in this program, but part-time work may also be permissible. Information on field experience can be obtained from the dean's office in which the student's major is housed.

INDUSTRIAL WORK EXPERIENCE

A maximum of 24-semester hours of technical credit may be earned through examination by those students who have completed three years of skilled occupational experiences beyond the learning level of a trade. Students with less than this amount (seven years) of experience may request examination in specific technical courses upon presentation of evidence of appropriate work experience in that area. Students desiring credit for skilled occupational experiences should present evidence of the required amount of work to the program director of Vocational Education (Trade and Industry) shortly after registration to allow special program consideration.

TECHNICAL SERVICE SCHOOLS

Many manufacturers offer special purpose technical courses. Some of them may be suitable for college credit. See the course description for details.

PROFESSIONAL TEACHER EDUCATION

The professional teacher education programs at Stout are administratively housed in the respective schools. Complete curriculum for specific teacher education programs are found elsewhere in this bulletin under Art Education, Early Childhood Education, Home Economics Education, Technology Education, Marketing Education, Special Education, and Vocational and Technical Education.

The officially designated coordinating unit for the various teacher education programs is the Professional Education Council which is convened by the dean of the School of Education and Human Services and has appropriate representation from contributing programs. The Office of Teacher Education serves a facilitative function for the Professional Education Council and exists to support department and programs preparing education personnel. This office serves as a resource center for students, faculty, program directors and administrators; maintains appropriate student records; and serves as a clearinghouse for the Professional Education Council, accrediting agencies and public agencies.

Admission to Advanced Standing During the freshman year, each student enrolled in a teacher education program should begin fulfilling professional standards requirements. In addition to possessing expertise in a subject area, an effective teacher has fundamental skills and competencies needed in any teaching field. The professional standards are intended to ensure that teacher education students meet certain basic standards of the profession. All teacher education students enrolled at Stout must meet all of the following standards by the time they apply for admission to Advanced Standing in a Teacher Education Program prior to enrolling for the term which will result in their completing more than 60 cumulative credits. These standards must also be maintained throughout each program as a require-

ment for graduation.

1. Communications:

(A) *College English* Teacher education students must have earned a grade of at least a "C" in both English 326-101 and 326-102 or 321-111 and 326-112.

(B) *Speech Proficiency* Completion of the speech proficiency requirements, as evaluated in 391-100, Fundamentals of Speech. This requirement may also be met by successful completion of both the written and oral portions of "The Speech Department Credit by Examination Procedure" for 391-100, or by successful completion of a second speech course selected from the following: 391-200, 391-206, 391-508, or 391-512.

2. Academic Standards:

Teacher education students must maintain a minimum grade point average of 2.5.

Admission to Student Teaching Admission to Advanced Standing in a Teacher Education Program does not assure admission to student teaching. Application should be made for admission to student teaching as outlined in the Teacher Education Student Handbook. Students with questions regarding their rights are advised to consult the Student Handbook.

TEACHER CERTIFICATION

Teacher education programs at Stout have been established to meet state teacher certification in Wisconsin. Programs will likely meet certification requirements in many, if not all, other states. However, teacher certifications vary by state (may require state history, etc.) and requirements change periodically. Therefore, a student contemplating teaching in another state may wish to clarify the acceptance of the program at Stout by the state in which they plan to teach. Information concerning certification may be obtained from the Office of Teacher Education.

INDEPENDENT STUDIES PROGRAM

Students at Stout may design a limited number of individual courses for credit through the University's independent study program. This program is open to students during any enrollment or course-add period. Students initiate the process by obtaining an application for independent study from the office of the associate dean of the school in which this independent study is to be offered. The student then completes the form by identifying the course objectives, methods and evaluation process to be used and submits it to an independent study coordinator for further processing and approval. Credits are awarded on the basis of expending a minimum of 48 hours of effort for each credit

and an evaluation of the extent to which the stated objectives were met. Independent study topics are ordinarily different from existing courses. Approved independent study courses are completed by the student in consultation with an assigned independent study coordinator. The coordinator provides counsel and aid to the student in achieving the approved desired learning objectives.

Students should consult in advance with their program director to find out whether the proposed independent study may be used in the degree program.

THE AMERICAN COLLEGE IN LONDON

A semester at the American College in London provides supplemental learning experiences to students enrolled in the fashion merchandising and clothing, textiles and design programs. This four-year college offers an opportunity to live where there are long traditions related to textile, apparel design and merchandising. One of the major retailing centers in the world, London provides opportunity for the study of a variety of businesses and exposure to other cultures.

CREDIT BY EXAMINATION

Stout has several procedures which permit students to demonstrate their competence through externally and internally developed examinations. External examinations include the College Level Examination Program (CLEP) and the Advanced Placement program (AP). For further information or external examinations, inquire at the University Counseling Center.

Credit by examination is also possible under "Test Out" procedures developed by various Stout departments. For further information on such examinations, ask at the appropriate school or department office.

In all cases, students testing out of a course by examination will be charged a testing fee.

OPPORTUNITIES FOR STUDY ABROAD

Increasing the international dimension of Stout's programs is one of Stout's continuing thrusts. The Office of International Programs has developed relationships with selected international institutions to assist students in arranging for study abroad. Currently, formal cooperative agreements exist with the following institutions:

United Kingdom

Northeast Wales Institute of Higher Education, Wrexham
University of Wales, Aberystwyth
University of Wales, Cardiff

Middlesex Polytechnic University, London
Wisconsin in Scotland Study Center, Dalkeith

People's Republic of China

Institute of Light Industry, Beijing
Institute of Light Industry, Xian
Yang

Japan

Kansai Gaidai University of Asian Studies, Osaka

Mexico

Monterrey Institute of Technology and Higher Studies, Monterrey

In addition, there are other overseas study opportunities through other arrangements.

Between 150 and 250 international students from various parts of the world come each year to study at Stout. This provides opportunity for those who are not able to study abroad to have interactions with students from other cultures. Whenever possible, undergraduate students are encouraged to interact with international students and to study abroad as part of their education at Stout.

Contact the Office of International Programs for additional information.

CONTINUING EDUCATION

Stout has a tradition of providing educational opportunities on a local, regional and statewide basis as a commitment to the concept of life-long learning. The campus is involved in several areas of non-traditional higher education. These areas include both credit and non-credit activities as well as conferences and workshop experiences of a unique nature.

Stout's program in home economics, industrial technology, industrial arts and vocational rehabilitation are among the largest in the world. Off-campus courses are drawn from these strengths as well as family counseling, early childhood education and numerous other fields of study and interest.

The coordination of all off-campus activities is the responsibility of the Office of Continuing Education and Summer Session. Off-campus credit and non-credit opportunities include:

1. Off-campus courses offered in the rural local service area of Stout, as well as statewide, based on our special mission within the UW System with a particular focus on vocational-technical education.
2. Teleconference courses mediated via the use of telephone network coordinated by our campus.
3. Television courses via ETV Network.
4. Weekend workshops.
5. National and regional conferences.
6. Weekend college.

SUMMER SESSION

Stout conducts a 10-week summer session with classes varying in length from one week to eight weeks. Students may register each Monday of the week their classes are scheduled to begin. It is possible to earn 10 credits during the 10 weeks of summer session. The Summer Session Bulletin is available after March 1. A copy will be sent on request. Pre-enrollment is encouraged in April and May.

PIGEON LAKE

The UW System sponsors summer programs at the Pigeon Lake Field Station near Drummond in Bayfield County of northwestern Wisconsin. Station offerings include undergraduate and graduate courses in field biology and in mapping, outdoor education, recreation, counseling and art. Class sessions vary from one to three weeks in length with some classes weekends only. Credit earned at the Station is accepted as residence credit at

Stout. The Field Station is located in a natural outdoor laboratory among the lakes, streams and forests of relatively unspoiled portions of northern Wisconsin. For additional information, contact the Registrar at Stout or the director of the Pigeon Lake Field Station, UW-River Falls.

THE GRADUATE COLLEGE

The Graduate College, a unit of the Division of Academic Affairs, has responsibility for graduate education in the University. It administers graduate admissions, records, policies and other procedures relating to graduate students. Graduate programs are administered as follows: School of Industry and Technology - Master's programs in Industrial Education, Management Technology, Media Technology, Safety, Vocational Education, and Educational Specialist's program in Industrial and Vocational Education; School of Home Economics - Master's programs, in Clothing, Textiles

and Related Art, Food Science and Nutrition, Home Economics Education, and Hospitality and Tourism; School of Education - Master's programs in Guidance and Counseling, Marriage and Family Therapy, Education, Education - School Psychology, Vocational Rehabilitation, and Educational Specialist's program in Guidance and Counseling.

DUAL UNDERGRADUATE — GRADUATE ENROLLMENT

Undergraduate students in their last term of enrollment who are carrying 14 or fewer undergraduate credits may wish to initiate graduate study in one of Stout's graduate programs. Application for dual enrollment must be made to the Graduate office. Upon approval, initial enrollment in a graduate program may be concurrent with the final enrollment for the undergraduate degree.



PROGRAMS OF STUDY

The University allows students to graduate under the provisions of program requirements in effect at the time they began their program of study at Stout. The University, through its advisement system, provides annually updated program plan sheets for each major. Current program plan sheets reflect the competencies most desired in graduates. While students may choose to follow the program requirements listed in the catalog, students are encouraged to follow the program requirements as stated on the program plan sheets at the time of their initial conference with their faculty adviser. Students who begin a program with the intention of graduating from Stout must meet with a faculty adviser within three years of their initial enrollment at a post-secondary institution to determine the program requirements under which they will graduate.

SCHOOL OF INDUSTRY AND TECHNOLOGY

Dr. M. James Bensen, Dean

APPLIED TECHNOLOGY

Applied Technology is based on a foundation of mathematics, science and applied engineering. Program concentrations include Microelectronics, Material and Process Engineering, Communication Systems and Manufacturing Systems. These have been developed to satisfy the expressed need of industry. Coursework requires "hands on" application of engineering theory and practice. Graduates are applications-oriented individuals who are prepared to meet the "high tech" changes facing industry.

This degree program requires each student to complete one year each in college calculus and analytical geometry, chemistry and physics. Therefore, the high school student should prepare with a strong background in mathematics and science. High school course work in electronics, computer programming and technology education is suggested.

MICROELECTRONICS

This concentration enables the graduate to apply knowledge of science and mathematics to solve industrial problems in the area of electronics. Areas of specialization include computers, microprocessors, communication, controls and electromechanical energy conversion.

MATERIAL AND PROCESS ENGINEERING

Graduates in this field use their extensive technical training to (1) establish material standards based upon industrial needs; (2) design, construct and utilize material test equipment; (3) evaluate material properties; (4) select the appropriate materials after analysis of the engineering, environmental, and production requirements to produce the desired product; (5) establish process procedures and specifications appropriate for a specific material or product; and (6) evaluate, select and/or modify processing methods to satisfy production requirements.

COMMUNICATION SYSTEMS

Communication Systems graduates use their extensive communications training to (1) identify and analyze the technical requirements for industrial and business communication; (2) develop plans and propose solutions to satisfy the communication requirements in business and industry; and (3) coordinate the implementation of technical systems for comprehensive communications within the industrial and business environment.

MANUFACTURING SYSTEMS

Graduates apply their knowledge of Computer Aided Manufacturing (CAM), Computerized Numerical Control (CNC), Computer Aided Design (CAD), Computer Aided Process Planning (CAPP), Flexible Manufacturing Systems, Robotics, and Group Technology in an industrial environment. Work may include the design and implementation of manufacturing systems utilizing the newest technologies. These positions may be in the manufacturing engineering department or may report directly to a manufacturing project manager, senior manufacturing systems analyst or senior industrial engineer.

NOTE: The dynamic nature of today's technology requires frequent changes in upper level courses. Consult with your adviser or program director for recently approved program changes.

PROGRAM REQUIREMENTS

GENERAL STUDIES — 33 credits required

Course	Credits
326-101 Freshman English—Composition	3
326-102 Freshman English—Reading and Related Writing	3
354-144 Computer Science I	3
391-100 Fundamentals of Speech	2
320-210 Principles of Economics I	3
170-301 Technology, Resources, Environment	2
366-340 ARC Standard First Aid and Personal Safety	2
326-516 Technical Writing for Industry	3
<i>Select from 3 of the following different departments to total 9 credits</i>	
387-110 Introductory Sociology	3
479-110 General Psychology	3
375-210 Government	3
338-Any History	3
365-Any Philosophy	3
<i>Select 3 credits from:</i>	
326-Any Literature	3
304-Any Art	1-3
360-Any Music	1-3
391-Any Theater	1-3

PROGRAM CORE — 53 credits required

130-103	Communication and Information Technology	3
130-110	Drafting	2
150-150	Industrial Organization	2
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3
311-135	College Chemistry I	5
311-136	College Chemistry II	5
355-156	Calculus & Analytical Geometry I	5
355-157	Calculus & Analytical Geometry II	5
110-270	Circuit Analysis	4
372-281	University Physics I	5
372-282	University Physics II	5
110-371	Solid State Electronics	3
354-331	Probability and Mathematical Statistics I	3

Choose one of the following concentrations:

MICROELECTRONICS CONCENTRATION

110-280	Networks	4
355-255	Differential Equations	3
110-376	Electronics Fabrication Laboratory	2
110-381	Linear Electronic Circuits	3
110-473	Digital Circuits	3
110-541	Digital Logic Systems	3
110-542	Computer Application in Electronics	3
110-574	Microprocessor Fundamentals	3
110-575	Microprocessor Interfacing	3
110-583	Fundamentals of Control	4
110-586	Instrumentation	3
372-527	Physical Electronics	3
Concentration Selectives - to be selected with the approval of the program director (to bring total program credit to 134)		
150-595	Seminar	1-2
110-689	Development Practicum	4
354-241	Assembly Language Programming	2
354-145	Computer Science II	3

You may select from 1-6 credits of:

xxx-xxx Field Experience

100-x49 Cooperative Education Experience

ELECTROMECHANICAL SYSTEMS

110-303	Mechanical Power Transmission	3
110-348	Motors and Generators	2
110-372	Electromechanical Energy Conversion	3
170-504	Computer Aided Manufacturing	3

110-585	Electric Power Distribution	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
110-683	Control Systems	3

COMMUNICATION SYSTEMS

110-582	Electronic Communication Systems	3
110-584	Microwave Systems	3
372-535	Optics	3
372-355	Optoelectronics	3

INSTRUMENTATION AND CONTROL

355-275	Linear Algebra	3
110-582	Electronic Communication Systems	3
110-683	Control Systems	3
170-510	Manufacturing Systems	3

MATERIAL AND PROCESS ENGINEERING CONCENTRATION

170-205	Design for Industry	2
170-312	Materials	3
311-201	Organic Chemistry Lecture	3
311-202	Organic Chemistry Laboratory	1
311-501	Physical Chemistry Lecture	3
311-503	Physical Chemistry Laboratory	1
311-541	Chemistry of Materials	3
170-504	Computer Aided Manufacturing	3

Select 8-10 credits

170-222	Industrial Ceramics	3
170-230	Metal Machining Technology	3
170-357	Metal Casting Processes	3
170-460	Metal Forming and Fabricating	2
170-313	Wood Technology	3
170-365	Production Welding Technology	3
170-250	Plastic Parts Production	2

Concentration Selectives - to be selected with the approval of the program director (to bring total program credit to 134)

214-150	Textiles	3
170-308	Surface Coatings and Treatments	2
170-513	Manufacturing Processes - Wood Products	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
170-537	Numerical Control	3
170-550	Advanced Plastics	2
170-559	Foundry Seminar	1-2
170-xxx	Advance Metallurgy (Fail.Anal)	3
170-xxx	Weld Engineering	2
170-511	Production and Transfer Tooling	3
311-x99	Independent Study	1-2
170-x99	Independent Study	1-2
170-500	Impacts of Automated Systems	
354-145	Computer Science II	3
354-241	Assembly Language Programming	2
372-325	Strength of Materials	3

You may select 1 to 6 credits of:

xxx-xxx Field Experience

100-x49 Cooperative Education Experience

COMMUNICATION SYSTEMS CONCENTRATION

160-105	Fundamentals of Financial Accounting	2
354-145	Computer Science II	3
130-234	Interactive Graphics	2
354-241	Assembly Language Programming	2
160-310	Management Information Systems	2
110-473	Digital Circuits	3
372-518	Microprocessors or	3
110-574	Microprocessor Fundamentals	3
130-505	Office Automation Technology	2
130-xxx	Networking Personal Computers	2
110-552	Electronic Communication	3
130-504	Communication and Information Systems	3

170-504	Computer Aided Manufacturing	3
120-640	Telecommunications Systems Teleconferencing	2
Concentration Selectives - to be selected with the approval of the program director (to bring total program credits to 134)		
130-xxx	Seminar in Communication and Information System	4
391-208	Theory of Communication	3
354-246	Computer Programming Cobol	2
355-275	Linear Algebra	3
372-252	Laser Light and Waves	1
150-500	Engineering Economy	2
354-341	Data Structures	3
372-355	Optoelectronics	3
170-489	Business and Industrial Internship	2-8
354-441	Computer Architecture and Operating Systems I	3
354-442	Computer Architecture and Operating Systems II	3
110-553	Instrumentation and Control	3
150-514	Industrial Enterprise Practicum	3
372-535	Optics	3
120-504	Elementary Photography	2
130-636	Computer Assisted Design Problems	2
120-615	Micrographic Fundamentals	1
120-630	Audio/Film/TV Production Fundamentals	3
You may select 1 to 6 credits of: xxx-xxx Field Experience 100-x49 Cooperative Education Experience		

MANUFACTURING SYSTEMS CONCENTRATION

170-205	Design for Industry	2
110-260	Introduction to Fluid Power	2
170-222	Industrial Ceramics	3
170-230	Metal Machining Technology	2
130-311	Technical Drafting	3
170-250	Plastics I	2
170-357	Metal Casting Processes	3
170-365	Production Welding Technology	2
170-313	Wood Technology	3
170-504	Computer Aided Manufacturing	3
170-505	Robotics	2
170-510	Manufacturing Systems	3
170-537	Numerical Control in Manufacturing	3
110-553	Instrumentation and Control	3
130-636	Computer Assisted Design Problems	2
Concentration Selectives - to be selected with the approval of the program director (to bring total program credits to 134)		
150-500	Engineering Economy	2
130-xxx	Statics, Strength, Kinematic	3
130-504	Communications and Information Systems	1-3
214-140	Textiles	3
150-200	Production/Operations Management	3
170-280	Packaging Fundamentals	2
110-361	Industrial Hydraulics	2
110-362	Industrial Pneumatics	2
170-513	Manufacturing Processes - Wood Products	3
170-380	Packaging Systems	3
170-489	Business and Industrial Internship	2-8
150-505	Product and Inventory Control	3
150-510	Product Processing	3
150-514	Industrial Enterprise Practicum	3
150-520	Quality Assurance	3
150-530	Material Handling	3
150-540	Time and Motion Study	3
150-550	Plant Layout	3
170-515	Metallurgy	3
170-559	Foundry Seminar	1-3
170-637	Numerical Control II, Continuous Path	3
170-xxx	Weld Engineering	2
354-241	Assembly Language Programming	2
372-518	Microprocessors and Applications	3
You may select 1 to 6 credits of: xxx-xxx Field Experience 100-x49 Cooperative Education Experience		

GENERAL BUSINESS ADMINISTRATION

The Business Administration program at Stout is unique in that it blends business with technology. It has a solid foundation of general-liberal studies and covers the functional areas of marketing, manufacturing, finance, personnel, accounting and law. It also requires comprehensive courses in policies, management information systems, leadership, and the legal and ethical aspects of management. The unique aspect of requiring credits in a technical component allows a student to tap one or more of Stout's technology areas such as construction, packaging, electronics, robotics, foods, textiles, computers and the like to complement the business program.

The program is practical oriented with both a required on-campus practicum and off-campus field experience or internship. Recent graduates have obtained positions in areas of sales, retailing, production control, manufacturing supervision, purchasing, cost accounting, personnel, restaurant management, automotive customer relations, banking and others.

Admissions to Business Administration Program: Students who enter the University with a declared interest in the Business Administration program are entered into a prebusiness classification. Prebusiness students must be admitted to the Business Administration program before registering for any term in which they will reach a total of 100 accumulated credits. Admissiion to the Business Administration program may be applied for after completion of the following requirements:

Completion of the following courses with a minimum grade of "C": 326-101, Freshman English—Composition or higher numbered English course; 391-100, Fundamentals of Speech or higher numbered Speech course; 320-210, Principles of Economics I; 160-206, Accounting I; 150-200, Production Management; 130-103, Communication and Information Technology; 160-100, Introduction to Business Administration.

Completion of a total of 45 or more credits with a GPA of at least 2.5/4.0. Transfer students are also entered into the prebusiness classification, and the requirements for admission to the program listed above apply. Transfer students should discuss the timing of their application for admission to the program with the program director during their first enrollment period.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in general/liberal studies	52-55 credits
Required in major studies	57 credits
Technical component	8 credits
Business electives	8 credits
Free electives	2-5 credits
Cumulative grade average for all courses completed at Stout—2.5/4.0	

PROGRAM REQUIREMENTS

GENERAL/LIBERAL STUDIES—52-55 credits required

		Credit
Communications Cluster		
326-101	Freshman English—Composition or	3
326-111	Freshman English—Honors I	
326-102	Freshman English—Reading and Related Writing or	3
326-112	Freshman English—Honors II	
326-320	Business Writing or 326-515 Technical Writing	3
329-121	Practical Spanish I	2
391-100	Fundamentals of Speech	2
391-226	Listening	2
<i>Select one course from:</i> 391-204, Techniques of Group Leadership; 391-210 Interpersonal Speech Communication; 479-570, Assertive Training Procedures; 479-579, Public Relations; 600-640, Telecommunication systems and Teleconferencing; and one course from: 391-200, Persuasive Speaking; 391-206, Discussion; or 391-508, Speech Skills for Business and Industry; or <i>select two courses from</i> 391-200, 391-206 or 391-508.		
<i>Select 6 credits from three areas or courses:</i> 212-xxx, Family Relations; 303-xxx, Anthropology; 336-xxx, Geography; 375-xxx, Political Science; 387-xxx, Sociology; 459-xxx, Vocational Rehabilitation; 479-xxx, Psychology; or 300-xxx, Women's Studies.		
<i>Select 6 credits from three areas or courses:</i> 1xx-, any Futures Course; 300-xxx, Foreign Tour; 300-575, The Ascent of Man; 304-xxx, Art History; 326-xxx, Literature; 32x-xxx, Foreign Language (not Spanish I); 338-xxx, History; 365-375; Personal and Professional Ethics, 391-232, Introduction to the Theater; or 120-xxx, Film History or TV Appreciation; 360-130 Music Appreciation; or 365-xxx, Philosophy or Logic.		
<i>Select 5 credits from any of the following areas including at least one lab course:</i> 308-xxx, Biology; 311-xxx, Chemistry; or 372-xxx, Physics.		
<i>Select 2 credits from any of the following activity-performance areas or courses:</i> 304-xxx, Art; 326-, Advanced Writing; 360-xxx, Music; 391-xxx, Theater Art; 391-202, Oral Interpretation; 391-244, Radio Programming and Production; 391-554, TV Programming and Performance; or 600-504, Elementary Photography.		
229-xxx	Any Nutrition; 366-102, Personal Health; 366-340, ARC Standard First Aid and Personal Safety; 479-xxx, Psychology of Wellness; or 479-673 Psychology of Stress	2
366-346	ARC Cardiopulmonary Resuscitation or 367-xxx, Physical Education (activity)	1
Quantitative Problem-Solving Cluster:		
Quantitative		
355-123	Finite Mathematics with Applications; or 355-152 calculus for Management and the Social Sciences	4

Computer Related - Foundation		
130-103 Communication and Information Technology	3	
Computer Related - Additional (2 courses required - select from either <u>or</u> both areas)	4	
a. Programming - 354-141, 354-142, 354-144, 354-145, 354-240, 354-241, 354-246		
b. Software Applications - 130-234, 130-504, 130-505, 130-507, 130-509, 160-310, 170-504, 214-435, 245-375, 245-xxx; Comp. Sys./Lodging - 459-605, 120-580		
Statistics (select one)		
320-325 Economic and Business Statistics; 354-130 Elementary Statistics; or 354-530, Statistical Methods	2-3	

MAJOR STUDIES—57 credits required (At least 50 percent of this section must be taken at Stout.)

Foundation:

160-115 Understanding Business or 150-304 Principles of Business Management	2
150-115 Understanding Business and Industry or	3
150-304 Principles of Business Management	3
160-100 Introduction to Business Administration	1
160-206 Accounting I	3
160-207 Accounting II	3
320-210 Principles of Economics I	3
320-215 Principles of Economics II	3

Basic Functional:

150-200 Production Operations Management	3
160-330 Principles of Marketing	3
479-582 Human Resource Management	3
160-318 Business Law I	3
160-340 Business Finance	3
150-600 Organizational Leadership	3

Advanced:

Select one course from each of the following four areas: 2 cr. min. Accounting-Cost/Finance: 160-335, 160-312, 160-320, 245-371, 150-500, 150-570, 130-475, 214-230, or 160-xxx. Accounting for Non-Profit and Governmental Agencies. Production-Operation: 150-505, 150-520, 150-530, 150-540, 229-650, 150-220, 130-543, or 214-274. Marketing: 160-334, 160-336, 160-337, 160-370, 160-438, 160-585, 160-679, 214-227, 214-329, or 214-527. Human Resources-Supervision: 140-581, 140-583, 198-560, 320-421, 459-587, 479-602, 245-626, 459-520, 320-420, 140-588, 479-xxx Personnel Staffing, 479-xxx Fringe Benefit Management, or 150-630.

Comprehensive:

Select one course from all five areas: Legal: 140-590, 160-319, 160-355, 160-573, 160-601, 245-625, or 160-xxx. Economics-Finance: 320-440, 320-445, 320-550, 320-435, 320-420, 320-680, or 320-xxx. International: 150-xxx, 160-260, 160-585, 160-xxx, or 320-680. Integrated Systems: 160-690, 160-230, or 150-660.

Applied:

Select one practicum course: 2 cr. minimum. 150-514, Industrial Enterprise Practicum; 160-461 Business Practicum/Management; 160-520 Seminar; 214-426 Fashion Merchandising Practicum; 245-312, Restaurant Operational Management; or other related practicum course.

Select one off-campus experience: 2 cr. minimum. 160-x49, Cooperative Education Experience; 160-489 Business and Industrial Internship; or 160-x98, Business Administration Field Experience.

TECHNICAL COMPONENT—8 credits

Select 8 credits of technical courses related to career areas such as Foods, Computers, Photography, Packaging, Textiles, Robotics, Automotive, Construction or others with approval of the Program Director.

ELECTIVES

Business Electives—8 credits, must include at least two courses of which at least one must be from Stout.

Free Electives—6-7 credits

Grade point average of at least 2.5 for last 32 credits, or 2.5 overall for Stout courses.

INDUSTRIAL TECHNOLOGY

Stout's Industrial Technology degree is a broadly based program designed to prepare individuals for a variety of responsible industrial positions. Graduates have gained recognition and success in many areas of industry. Typical assignments include production or construction supervision, quality assurance, packaging, process engineering, methods engineering, systems analysis, production control, cost estimating, purchasing, product design, sales and service, plant engineering, industrial relations, tools design, prototype development, and technical communications.

The program provides for learning experiences to develop competencies in each of four broad areas: knowledge of the characteristics of materials and manufacturing processes; understanding of management principles and their application to industrial problems; awareness of the environmental and sociological implications and those psychological principles which are important in working with, communicating with, motivating, and supervising people; and skill in utilizing the mathematical and physical sciences to understand and solve technological and economic problems found in industry.

GENERAL REQUIREMENTS—B.S. DEGREE:

GENERAL STUDIES—56-60 credits required

Course

Credits

English Requirement: The requirement will vary depending on the student's score on the English Placement Test (EPT) and the recommendation of the student's English adviser as follows:

1. EPT scores of less than 37: 326-090, 101, 102 and 4 additional credits.
2. EPT scores of 37 but less than 55: 326-101, 102 and 4 additional credits.
3. EPT scores of 55 or less than 65: 326-101, 102 and 3 credits of advanced writing and 1 credit in a writing module, seminar or other 1 credit suggested by the English department.
4. EPT scores of 65 or higher: 326-111, 112 or 101 and 102 or CLEP (College Level Examination Program), plus up to 4 additional credits of English to be determined by the student and the English adviser 10

Speech Requirement:

391-100 Fundamentals of Speech 2
 391-xxx Speech Skill (not 391-310 Introduction to Speech Correction) 2

Environment:

Select at least 2 credits: 170-301 Technology, Resources, Environment; 308-122 Biology—An Environmental Approach; 308-150 Man and the Environment; 308-350 Ecology; 311-553 Environmental Chemistry; xxx-xxx Any Approved Elective 2

Personal Development:

Select at least 2 credits: 212-250 Individual and Family Relations; 229-202 Fundamentals of Nutrition; 304-xxx Studio Art Elective; 32x-xxx Foreign Language; 360-xxx Music Elective; 367-xxx Physical Education; 479-571 Introduction to Health Psychology; 479-570 Assertive Training Procedures; xxx-xxx Any Approved Elective 2

Cultural Science:

Select 3 credits: 303-220 Introduction to Cultural Anthropology; 387-110 Introductory Sociology 3

Humanities:

Select at least 2 credits: 304-xxx Art History; 326-xxx Any Literature Course; 338-xxx Any History; 365-xxx Philosophy; 391-xxx Any Theater Course 2

Chemistry:

Select 5 credits: 311-115 General Chemistry; 311-125 Principles of Chemistry for Health Sciences; 311-135 College Chemistry I 5

Economics:

Select 3 credits: 320-201 General Economics; 320-210 Principles of Economics I 3

Statistics:

Select at least 2 credits: 320-325 Economic and Business Statistics; 354-130 Elementary Statistics; 354-530 Statistical Methods 2-3

History/Political Science:

Select 3 credits: 338-xxx Any Additional History Course; 375-210 Government 3

Computer Programming:

Select at least 2 credits: 354-141 Digital Computer Programming or any higher numbered programming course 2

Calculus:

Select at least 4 credits: 355-153 Calculus I; 355-156 Calculus and Analytic Geometry I 4-5

Physical Education and Health:

Select at least 1 credit: 366-101 Health Survey; 366-102 Personal Health; 366-340 ARC Standard First Aid and Personal Safety 1

Select at least 1 credit: 367-xxx Physical Education 1

Physics:

Select one group of at least 8 credits: 372-231 General Physics I and 372-232 General Physics II; 372-241 College Physics I and 372-242 College Physics II; 372-281 University Physics I and 372-282 University Physics II 8-10

Psychology:

Select 3 credits: 479-110 General Psychology; 479-150 Humanistic Psychology

3

PROFESSIONAL STUDIES - 24-26 credits required

150-150	Industrial Organization	2
150-200	Production/Operations Management	3
150-500	Engineering Economy	3
150-600	Organizational Leadership	3
160-330	Principles of Marketing	3
160-200	Financial-Managerial Accounting-Industrial Technology	3
xxx-xxx	Senior Capstone Experience	2

Select one course from the following:

320-420	Labor Economics or 320-421 Collective Bargaining and Labor Relations	2-3
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Select one course from the following:

479-483	Human Resource Development or 479-582 Human Resource Management	2-3
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Select one course from the following:

140-581	Occupational Safety/Loss Control or 140-588 Construction Safety	2
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BASIC TECHNOLOGY REQUIREMENTS - 11 credits required

110-204	Electricity/Electronics Fundamentals	3
130-110	Drafting or (for building construction concentration only),	
130-120	Construction Drafting	2

Select an additional 6-8 credits, depending on choice of concentration. See concentrations for complete listing. Credits beyond the 11 credit minimum may be applied to professional/technical selectives.

CONCENTRATIONS

Building Construction

130-424	Architectural Technology	3
130-526	Building Construction Specifications	2
130-527	Site Engineering	2
150-570	Estimating and Analyzing Construction Costs	2
150-670	Systems Approach to Construction Management	3
150-x98	Field Experience	2
160-573	Legal Aspects of Construction	3
170-270	Light Building Construction	2
170-370	Commercial Building	2
170-373	Concrete Technology	3

Select at least 2 credits:

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
170-102	Manufacturing Materials and Processes I	3

Select 10 additional professional/technical credits

Electronics

110-270	Circuit Analysis	4
110-371	Solid State Electronics	3
110-381	Linear Electronic Circuits	3
110-473	Digital Logic and Switching	3
355-154	Calculus II or	
355-157	Calculus and Analytic Geometry II	4-5

Select at least 6 credits:

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
130-140	Graphic Arts	2
170-102	Manufacturing Materials and Processes I	3
170-280	Packaging Fundamentals	2

Select 13 additional professional/technical credits

General

Select at least 6 credits:

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
130-140	Graphic Arts	2

170-102	Manufacturing Materials and Processes I	3
170-270	Light Building Construction	2
170-280	Packaging Fundamentals	2
120-504	Elementary Photography	2
Select from Groups I through VI as follows:		
Group I		
Select at least 4 credits: 130-424 Architectural Technology; 150-530 Material Handling; 150-550 Plant Layout; 170-275 Construction Materials; 170-370 Commercial Building		4
Group II		
Select at least 6 credits: 150-220 Quality Control for Service Industries; 150-505 Product and Inventory Control; 150-510 Production Processing; 150-520 Quality Assurance; 150-540 Time and Motion Study; 170-103 Manufacturing Materials and Processes II; 170-504 Computer Aided Manufacturing		6
Group III		
Select at least 2 credits: 130-246 Typography; 130-251 Composition; 130-366 Image Transfer; 170-315 Packaging Materials; 170-380 Consumer Packaging Systems or 170-385 Packaging Machinery		2
Group IV		
Select at least 4 credits: 110-551 Introduction to Microprocessors; 110-552 Electronic Communications; 110-553 Instrumentation and Control; 110-554 Electronics/Robotics; 130-103 Communication and Information Technology; 130-311 Technical Drafting; 130-504 Communications and Information Systems		4
Group V		
Select at least 6 credits: 160-334 Salesmanship and Sales Management; 160-337 Purchasing; 160-370 Principles of Advertising; 160-410 Manufacturing Cost Analysis; 150-514 Industrial Enterprise Practicum		6
Group VI		
Select at least 6 credits: 130-290 Mechanics of Solids I or 372-531 Statics; 130-291 Mechanics of Solids II or 372-325 Strength of Materials; 170-205 Design for Industry		6
Select additional credits in consultation with program director to bring degree total to at least		130
Graphic Arts Management		
130-140	Graphic Arts	2
170-280	Packaging Fundamentals	2
120-504	Elementary Photography	2
Select at least 20 credits:		
130-246	Typography	2
130-251	Composition	3
130-355	Line and Halftone Photography	2
130-366	Image Transfer	3
130-370	General Binding	2
130-475	Printing Economics	3
130-543	Graphic Arts Production Techniques	2
130-557	Color Separation	2
130-xxx	Industrial Experience	2
Select 10 additional professional/technical credits		
Industrial Distribution		
160-336	Industrial Marketing Management	3
160-438	Industrial Distribution	3
160-334	Salesmanship and Sales Management	3
160-438	Industrial Distribution	3
391-236	Listening	2
Select at least 11 credits:		
110-103	Power Mechanics	2
110-204	Electricity/Electronics Fundamentals	3
130-100	Communications or	
130-103	Communication and Information Technology	2-3
130-110	Drafting	2
Technical Selective		2

Select 17 additional professional/technical credits

Manufacturing Engineering

150-505	Product and Inventory Control	3
150-510	Production Processing	3
150-520	Quality Assurance	3
150-540	Time and Motion Study	3
160-410	Manufacturing Cost Analysis	3
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3
170-280	Packaging Fundamentals	2
354-530	Statistical Methods	3

Select at least 5 credits:

130-290	Mechanics of Solids I or	3
372-531	Statics	3
130-291	Mechanics of Solids II or	3
372-325	Strength of Materials	3
130-592	Mechanics of Machinery I or	3
372-533	Dynamics	3
130-593	Mechanics of Machinery II	3
311-531	Quantitative Analysis	3
311-541	Chemistry of Materials	3
372-222	Heat and Thermodynamics	2

Select 8 additional professional/technical credits

Mechanical Power Transmission

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
110-303	Mechanical Power Transmission	3
110-348	Motors and Generators	2
110-551	Introduction to Microprocessors	3
110-553	Instrumentation and Control	3
110-603	Problems in Power Transmission	3
150-530	Material Handling	3
160-334	Salesmanship and Sales Management	3
170-102	Manufacturing Materials and Processes I	3

Select 9 additional professional/technical credits

Packaging

130-140	Graphic Arts	2
170-102	Manufacturing Materials and Processes I	3
170-280	Packaging Fundamentals	2
170-315	Packaging Materials	3
170-380	Consumer Packaging Systems	3
170-381	Distribution Packaging	3
170-480	Packaging Design and Evaluation	3
170-580	Packaging Development	3
170-585	Packaging Seminar	2
304-101	Fundamentals of Design	3

Select at least 3 credits:

308-306	General Microbiology	4
311-541	Chemistry of Materials	3
372-325	Strength of Materials	3

Select 10 additional professional/technical credits

Plant Engineering

110-260	Introduction to Fluid Power	2
130-424	Architectural Technology	3
150-450	Maintenance Management	2
150-550	Plant Layout	3
170-102	Manufacturing Materials and Processes I	3
311-553	Environmental Chemistry	3
372-222	Heat and Thermodynamics	3
372-325	Strength of Materials	2
150-x98	Field Experience - Series or	2
150-489	Business and Industrial Internship or	2
150-x49	Cooperative Education Experience	2

Select at least 2 credits:	
110-103	Power Mechanics
110-303	Mechanical Power Transmission
170-103	Manufacturing Materials and Processes II
170-280	Packaging Fundamentals

Select at least 2 credits:	
110-506	Energy Management
150-530	Material Handling
170-372	Heating and Air Conditioning

Select 9 additional professional/technical credits

Product Development

130-311	Technical Drafting	3
130-532	Mechanical Design	4
130-537	Mechanical Design Drafting	2
130-593	Mechanics of Machinery II	3
130-290	Mechanics of Solids I or	
372-531	Statics	3
130-291	Mechanics of Solids II or	
372-325	Strength of Materials	3
130-592	Mechanics of Machinery I or	
372-533	Dynamics	3

Select at least 6 credits:

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
130-140	Graphic Arts	2
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3

Select 10 additional professional/technical credits

Quality Technology

110-260	Introduction to Fluid Power	2
150-220	Quality Control for Service Industries	3
150-520	Quality Assurance	3
150-620	Quality Assurance—Practicum	2
170-102	Manufacturing Materials and Processes I	3
170-508	Industrial Metrology	3
311-541	Chemistry of Materials	3
372-325	Strength of Materials	3

Select 17-19 additional basic technology and professional/technical credits

Secondary Resource Management

160-410	Manufacturing Cost Analysis	3
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3
170-280	Packaging Fundamentals	2
170-301	Technology/Resources/Environment	2
170-401	Solid Waste Technology	3
170-403	Secondary Resource Systems Management (Inactive)	3
170-503	Resource Recovery Practicum (Inactive)	3
311-541	Chemistry of Materials	3

Select 2 additional credits in basic technology and 10 additional professional/technical credits

Special

Select at least 6 credits:

110-103	Power Mechanics	2
110-260	Introduction to Fluid Power	2
130-140	Graphic Arts	2
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3
170-270	Light Building Construction	2
170-280	Packaging Fundamentals	2
120-504	Elementary Photography	2

Select 20 credits in approved concentration core

Select 10 additional professional/technical credits

Technical Communications		
110-551	Introduction to Microprocessors	3
130-140	Graphic Arts	2
130-414	Technical Illustrating	3
326-425	Copy Editing and Preparation	2
130-103	Communication and Information Technology or	
391-208	Theory of Communication	3
120-504	Elementary Photography or	
120-561	Advanced Graphic Production	2

Select at least 4 credits:

110-103	Power Mechanics	2
110-105	Energy Technology (Inactive)	3
110-260	Introduction to Fluid Power	2
110-303	Mechanical Power Transmission	3
130-234	Interactive Graphics	2
170-102	Manufacturing Materials and Processes I	3
170-222	Industrial Ceramics	3

Select at least 7 credits:

110-552	Electronic Communications	3
130-246	Typography	2
130-251	Composition	3
130-504	Communications and Information Systems	1-3
130-636	Computer Assisted Design Problems	2
198-560	Training Systems in Business and Industry	3
326-535	Writing Technical Manuals	3
354-240	Intermediate Computer Programming	3
354-246	Computer Programming—COBOL	3
120-630	Audio/Film/TV Production Fundamentals	3

Select 10 additional professional/technical credits

GENERAL OR SPECIAL

Students who have identified professional objectives which cannot be met within the established concentration may develop, in consultation with the program director, a special program to meet personal interests and needs. The student who cannot or does not wish to select a specific concentration will be placed in a structured, general program.

OFF-CAMPUS LEARNING EXPERIENCES

Three types are available: Field Experience; Cooperative Education Experience; and Internship. Students are encouraged to plan early for this learning experience since competition for industry-related sites is keen and those with the best preparation are selected.

ELECTIVES—11-19 credits required

Candidates for the degree should select their electives to complement objectives of their concentration.

MARKETING EDUCATION

The field of marketing requires training for owners, managers and employees engaged primarily in marketing or merchandising goods and services. Marketing Teacher Education at Stout provides the teachers to train the work force.

Marketing Education is one area of vocational education supported by local, state and federal funds. Teachers graduating with this major are prepared to teach marketing education at the secondary and post-secondary levels. Many graduates enter marketing positions in business and industry.

Marketing Education students have three options from which to choose in order to fulfill their major requirements—General Marketing, Fashion Merchandising, and Hotel and Restaurant Management.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 131-135 credits
Required in general studies 50 credits
Required in major studies 34-36 credits
Required in professional education 46 credits
Electives 1-3 credits
2. Although it is not a requirement for graduation, students should be aware of the fact that they must acquire a minimum of 4,000 hours of occupational experience before they can be certified for teaching vocational marketing and distributive education in Wisconsin and Minnesota.
3. Students must fulfill the English adequacy and speech proficiency requirements.
4. Specific course requirements and additional information about minors and/or concentrations can be obtained from the Program Director.
5. Students must have a 2.5 or higher cumulative grade point average to enter the teacher education program. Some courses require an "A" or a "B" to be counted in this program.
6. Participation in Collegiate DECA is required.

PROGRAM REQUIREMENTS

GENERAL STUDIES—50 credits required

Course		Credit
320-210	Principles of Economics I	3
320-215	Principles of Economics II	3
326-101	Freshman English-Composition	3
326-102	Freshman English-Reading and Related Writing	3
391-100	Fundamentals of Speech	2
479-110	General Psychology	3
Art-Music (304-xxx, not Art History; 360-xxx)		3
Science (308-xxx, 311-xxx, 372-xxx from 2 areas; one lab required)		6
Literature (326-xxx)		3
Humanities (338-xxx; 304-xxx, Art History; 365-201; 328-xxx; 329-xxx)		6
Mathematics (355-xxx)		4
Health (366-xxx)		1
Physical Education (367-xxx)		1
Speech (391-200; 391-204; 391-508; 391-512)		2
Social Science (303-220; 375-210; 387-110)		3
Writing (326-320; 326-346; 326-515)		3

MAJOR STUDIES—34-36 credits required

Option No. 1—General Retailing and Marketing

160-206	Accounting I	3
160-207	Accounting II	3
150-304	Principles of Business Management	3
150-600	Organizational Leadership	3
160-318	Business Law I	3
160-330	Principles of Marketing	3
160-334	Salesmanship and Sales Management	3
160-370	Principles of Advertising	3
196-501	Marketing Education-Project Method	3
479-582	Human Resource Management	3

Select from 4 to 6 credits:

160-355	Principles of Risk Management	2
160-365	Principles of Real Estate	2
160-679	Marketing Research	3
160-690	Administrative and Business Policies	3
320-325	Economic and Business Statistics	3
320-550	Managerial Economics	3
479-579	Public Relations	2

Total 34-36

Option No. 2—Fashion Merchandising

150-304	Principles of Business Management	3
160-206	Accounting I	3
160-207	Accounting II	3
160-330	Principles of Marketing	3
160-334	Salesmanship and Sales Management	3

160-370	Principles of Advertising	3
196-501	Marketing Education-Project Method	3
214-120	Introduction to Apparel/Textiles/Merchandising	2
214-227	Basic Merchandising	3
214-329	Fashion Merchandising Promotion	3
214-339	Apparel Merchandising	1
<i>Select from 4 to 6 credits:</i>		
214-140	Textiles	3
214-230	Merchandise Planning and Control	4
214-398	Fashion Merchandising Field Experience	2
214-519	International Economic Trends in Textiles/Clothing	2
214-625	Mass Merchandising	2
	Total	34-36

Option No. 3—Hotel and Restaurant Management

150-304	Principles of Business Management	3
160-206	Accounting I	3
160-207	Accounting II	3
160-330	Principles of Marketing	3
160-334	Salesmanship and Sales Management	3
160-370	Principles of Advertising	3
245-100	The Role of Management in Hospitality Industry	2
245-200	Introduction to Property Management	2
245-205	Hospitality Organization Management	3
245-240	Introduction to Tourism and the Travel Industry	2
<i>Select from 4 to 6 credits:</i>		
229-124	Foods	4
245-201	Hospitality Housekeeping Management	2
245-302	Front Office Management	3
245-301	Bar Management	2
245-344	Hospitality Marketing and Sales	3
	Total	34-36

PROFESSIONAL EDUCATION REQUIREMENTS—46 credits

Marketing Education—32 credits

196-201	Introduction to Marketing Education	3
196-202	Supervision of Distributive Education Clubs	3
196-301	Marketing Education - Methods	4
196-401	Marketing Education - Curriculum	3
196-408	Marketing Education - Student Teaching	16
196-555	Marketing Education Seminar	3

Education, Vocational Education, General Psychology—18 credits

199-502	Principles of Vocational/Technical/Adult Education	2
199-560	Cooperative Occupational Educational Programs	2
421-303	Educational Psychology	2
421-536	Working With the Culturally Different	2
421-576	Field Experience - Cross-Cultural Experience	1
421-582	Secondary Reading and Language Development	2
431-630	Mainstreaming Special Students	3
	Total	46

GENERAL ELECTIVE - From 1 to 3 credits

TECHNOLOGY EDUCATION

Technology education (formerly industrial education) is a bachelor of science degree program consisting of 130 semester credits of general, professional and technical course work. The program leads to teaching certification in all 50 states. Although this program is designed to lead to an education degree, graduates find challenging career opportunities in business and industry as well. Students study fields such as communication, construction, manufacturing and transportation. They work with technologies such as computers, robots and lasers and with more conventional equipment used in processing materials, energy and information. Students are required to complete at least 50 credits of general education in areas such as English, mathematics, science, speech and social studies. They are also required to complete 29 credits of professional education in areas of curriculum and instruction, human behavior and student teaching in a secondary school. Forty-four credits of technical work are also required. Of this, 35 credits are prescribed for all students in the majors and nine credits are electives to permit additional study in a selected area of communication, construction, manufacturing or transportation.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in general studies	50 credits
Required in major studies	44 credits
Required in professional education	29 credits
Electives	7 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—50 credits required

Course	Credit
326-101 and 102, Freshman English	6
326-xxx Advanced Writing elective	3
391-100 Fundamentals of Speech	2
391-xxx Advanced Speech elective	2
355-120 and 121, Introductory College Mathematics I and II	8
479-110 General Psychology	3
320-201 General Economics	3
338-xxx History elective	3
387-110 Introductory Sociology	3
375-210 Government	3
311-115 General Chemistry I	5
372-231 General Physics	4
Science Elective	2
366-101 Health Survey	1
367-1xx Physical Education elective	2

MAJOR STUDIES—44 credits required

110-105 Energy Technology	3
110-201 Transportation	2
130-103 Communication and Information Technology	3
130-504 Communication and Information Systems	3
170-102 Manufacturing: Materials and Processes I	3
170-103 Manufacturing: Materials and Processes II	3
170-270 Light Building Construction	2
170-205 Design for Industry	2
130-110 Drafting	2
110-204 Electricity-Electronics Fundamentals	3
110-551 Introduction to Microprocessors	3
150-514 Industrial Enterprise Practicum	3
1xx-4xx Research Development	2
Technical electives	9

PROFESSIONAL EDUCATION—29 credits required

190-160 Introduction to Industrial Education	2
190-205 Methods of Teaching Industrial Education	2
190-390 Laboratory and Classroom Management in Industrial Education	2
190-405 Curriculum Development in Industrial Education	2
190-406 Instructional Evaluation in Industrial Education	2
190-408 Student Teaching	8
413-501 Introduction to Guidance	2
421-303 Educational Psychology	2
421-422 Principles of Secondary Education	2
421-682 Reading Methods - Secondary School	2
431-630 Mainstreaming Special Students	3

ELECTIVES—7 credits required

Select courses offered at Stout or those approved for transfer.

VOCATIONAL CERTIFICATION

A student who wishes to become vocationally certifiable in Wisconsin must complete the course 469-502 Principles of Vocational, Technical and Adult Education and have a minimum of 2,000 hours of related work experience.

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 130 credits
Required in general studies 49-51 credits
Required in major studies 42 credits
Required in professional education 24 credits
Electives 13-15 credits
2. A student must obtain a minimum of 2,000 hours of appropriate work experience for provisional certification to teach vocational, trade and industrial courses. This requirement must also be met before a degree can be granted. (For more details, see program director.)
3. Students must make applications for admission to the education sequence. Candidates must hold a cumulative grade point average of at least 2.25 and meet the speech, English and health requirements as described in the Professional Education section of course descriptions.

PROGRAM REQUIREMENTS

GENERAL STUDIES—49-51 credits required

Course		Credit
130-103	Communication and Information Technology or	
300-101	Computer Literacy	2-3
311-115	General Chemistry	5
320-201	General Economics	3
326-xxx	Advanced Writing Elective	3
326-101	and 102, Freshman English	
338-xxx	History Elective or	6
375-210	Government	3
355-120	and 121, Introduction to College Math I and II	8
372-231	General Physics	4
387-110	Introductory Sociology	3
391-100	Fundamentals of Speech	2
391-xxx	Advanced Speech Elective	2
413-571	Psychology of Marriage and Family	2
479-110	General Psychology	3
366-101	Health Survey or	
366-340	ARC Standard First Aid and Personal Safety	1-2
367-1xx	Physical Education	2

MAJOR STUDIES—42 credits required

Because each student brings different qualifications as a result of prior training and experience, the student with the assistance of the program director will define all 42 technical credits in terms of student and job competency needs.

PROFESSIONAL EDUCATION—24 credits required

190-205	Methods of Teaching Industrial Education	2
190-405	Curriculum Development in Industrial Education	2
190-406	Instructional Evaluation in Industrial Education	2
190-408	Student Teaching	8
199-502	Principles of Vocational/Technical/Adult Education	2
199-534	Task Analysis	2
413-501	Introduction to Guidance	2
421-303	Educational Psychology or 421-685 Psychology of Adult Education	2
421-536	Working with the Culturally Different	2

ELECTIVES—13-15 credits required

SCHOOL OF HOME ECONOMICS

Dr. J. Anthony Samenfink, Dean

CHILD DEVELOPMENT AND FAMILY LIFE

The Child Development and Family Life program is the study of human development and family life in which child, family and community are viewed as interrelated. A multi-disciplinary approach provides perspective and specialized knowledge to deepen the understanding of people and to develop creative approaches to serving them. Graduates of the program locate positions in family life education, human services and business-related employment settings, in addition to being prepared for advanced study.

The program integrates academic study with significant experiential learning with children, families and community groups. Students are involved in observation/participation, field experience, independent study and practicum throughout the program. Schools, hospitals, human service agencies, community groups, adolescent group homes, homes for older people, and University Extension programs provide opportunities for the synthesis of practical and theoretical knowledge in child development and family life.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	128 credits minimum
Required in general studies	49 credits
Required in major studies:	
Child Development Concentration	79 credits
Family Life Concentration	79 credits
Human Resources Management Concentration	79 credits

PROGRAM REQUIREMENTS

GENERAL EDUCATION STUDIES—49 credits required

General Requirements—minimum of 16 credits

Course	Credit
326-101 Freshman English: Composition* or 326-111 Freshman English—Honors I	3
326-102 Freshman English: Reading and Related Writing* or 326-112 Freshman English—Honors II	3
391-100 Fundamentals of Speech*	2
<i>Select a minimum of 9 credits from: Biology 308-122, 132, 332, 333; Chemistry 311-115, 135; Physics 372-221, 251, 252, 254; Mathematics 355-118*, 120</i>	9
<i>Select a minimum of 12 credits from: Anthropology 303-220, 250; Economics 320-201, 210; Geography 336-104; Political Science 375-210; Psychology 479-110*; or Sociology 387-110*</i>	12
<i>Select a minimum of 13 credits from: Literature (minimum of 3 credits) 326-303, 348, 355, 360, 400; History (minimum of 3 credits) 338-105, 120, 140; Language and Philosophy (minimum of 2 credits) 328-101, 329-103, 365-201, 365-301, 300-255, 100-500; Fine Arts (minimum of 5 credits) from Art, Music, Media, Speech, Theater</i>	13
367-xxx Any Physical Education Activity Course(s)*	1
Electives to total 49 credits.	

*Required courses with a minimum grade of "C" or better, including transfer credits

MAJOR STUDIES—79 credits required

Family Life Concentration—79 credits

212-101	Introduction to Child Development and Family Life*	1
212-401	Issues in Child Development and Family Life*	1
212-124	Child Development I*	3
212-163	Adult-Child Interaction*	2
212-524	Child Development II*	3
212-530	Adulthood and the Family*	3
212-680	The Aging Person	2
212-250	Individual and Family Relations*	3
212-350	Dynamics of Family Development*	3
212-660	Current Topics in Sexuality*	1
387-205	Introduction to Social Work*	3
387-420	Child and Family Agencies*	3
212-685	Seminar—The Culturally Distinct Child and Family*	3
212-264	Child Guidance*	3
242-201	Teaching Techniques in Home Economics*	2
242-651	Family Life Education Programs*	2
212-507	Parent Education/Involvement*	2
212-535	Seminar on Self-Growth*	2
212-650	Introduction to Marriage and Family Therapy*	3
212-651	Marriage and Family Therapy Seminar*	3
413-666	Alcoholism and Family Systems Intervention*	2
375-510	Public Policy Analysis*	3
212-601	Child and Family Law*	3
212-610	Family Impact Seminar*	3

212-654	The Workplace and The Family*	2
245-676	Family Finance*	2
212-553	Dual Career Families*	1
212-590	Family Research and Methodology*	3
212-265	Child Guidance Practicum*	1
212-693	Practicum in Child Development and Family Life*	4-8
<i>Choose 3 credits from the following:</i>		
212-251	Early Years of Marriage; 212-351, Death and the Family; 212-352, Parenthood; 212-451, Divorce; 212-554, Single Parent Family; 212-570, Singlehood; 212-580, Future of the Family; 212-638, Child Abuse and Neglect; 212-652, Fatherhood; 212-666, Family Planning; 387-215, Sociology of the Family	3
<i>Choose 3 credits from the following:</i>		
229-212	Nutrition; 245-360, Consumer Economics; 245-650, Human Habitat Electives	1

*Required courses

Child Development Concentration—79 credits

212-101	Introduction to Child Development and Family Life*	1
212-401	Issues in Child Development and Family Life*	1
212-124	Child Development I*	3
212-163	Adult-Child Interaction*	2
212-524	Child Development II*	3
212-264	Child Guidance*	3
212-294	Teaching/Learning Strategies in Early Childhood*	5
212-274	Creative Activities for Young Children*	2
212-507	Parent Education/Involvement*	2
212-665	Administration—Early Childhood Education Programs*	3
212-601	Child and Family Law*	3
212-610	Family Impact Seminar*	3
212-535	Seminar on Self-Growth*	2
212-607	Parent Counseling*	2
212-590	Family Research and Methodology*	3
212-265	Child Guidance Practicum	1
212-235	Child Development Laboratory*	1
212-693	Practicum in Child Development and Family Life*	4-8
375-510	Public Policy Analysis*	3
366-340	ARC Standard First Aid and Personal Safety*	2
212-250	Individual and Family Relations*	3
212-350	Dynamics of Family Development*	3
387-205	Introduction to Social Work*	3
212-685	Seminar—The Culturally Distinct Child and Family*	3
387-420	Child and Family Agencies*	3
<i>Choose 2 credits from the following:</i>		
431-532	Psychology of the Exceptional Child; 212-680 The Aging Person; 229-136 Nutrition for Young Children	2
<i>Choose 4 credits from the following:</i>		
212-351	Death and the Family; 212-352 Parenthood; 212-451 Divorce; 212-553 Dual Career Families; 212-554 The Single-Parent Family; 212-580 Future of the Family; 212-638 Child Abuse and Neglect; 212-666 Family Planning; 387-215 Sociology of the Family	4
<i>Choose 3 credits from the following:</i>		
229-404	Food Service for Children; 150-600 Organizational Leadership; 387-250 Social Psychology; 479-582 Human Resource Management	3
Electives		
7		

*Required courses

Human Resources Management Concentration—79 credits

212-101	Introduction to Child Development and Family Life*	1
212-401	Issues in Child Development and Family Life *	1
212-124	Child Development I*	3
212-163	Adult-Child Interaction*	2
212-524	Child Development II*	3
212-530	Adulthood and the Family*	3
212-250	Individual and Family Relations*	3
212-350	Dynamics of Family Development*	3
387-205	Introduction to Social Work*	3
387-420	Child and Family Agencies*	3
212-264	Child Guidance*	2
242-201	Teaching Techniques in Home Economics*	2
242-651	Family Life Education Programs*	2

212-535	Seminar on Self-Growth*	2
212-650	Introduction to Marriage and Family Therapy*	3
212-651	Marriage and Family Therapy Seminar*	3
413-666	Alcoholism and Family Systems Intervention*	2
150-600	Organizational Leadership*	3
479-582	Human Resource Management*	3
212-665	Administration—Early Childhood Education Programs*	3
375-510	Public Policy Analysis*	3
212-601	Child and Family Law*	3
212-610	Family Impact Seminar*	3
212-654	The Workplace and the Family*	2
245-676	Family Finance*	2
212-553	Dual Career Families*	1
212-590	Family Research and Methodology*	3
212-265	Child Guidance Practicum*	1
212-693	Practicum in Child Development and Family Life*	4-8

Choose 3 credits from the following:

212-251	Early Years of Marriage; 212-351 Death and the Family; 212-352 Parenthood; 212-451 Divorce; 212-554 The Single-Parent Family; 212-570 Singlehood; 212-580 Future of the Family; 212-638 Child Abuse and Neglect; 212-660 Current Topics in Sexuality; 212-666 Family Planning; 387-215 Sociology of the Family	3
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Choose 3 credits from the following:*

229-212	Nutrition; 245-360 Consumer Economics; 245-650 Human Habitat.	3
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*Required courses

CLOTHING, TEXTILES AND DESIGN

The Clothing, Textiles and Design program is organized into four concentrations related to selected areas of the clothing and textile industries and integrates specific vocational education with liberal education. Students select one major concentration and an appropriate minor or 22-credit emphasis area.

Career opportunities for a graduate in the Clothing, Textiles and Design program are directly related to the areas of concentration. The Apparel Manufacturing Concentration prepares graduates for positions related to apparel production, quality control and operations. The Apparel Design Concentration prepares graduates for careers in designing apparel, fashion illustration, fashion coordination, promotion or public relations. The Textile Design Concentration provides opportunities to develop creative expression in applied textile design or in fabric design. The Textile Technology Concentration prepares graduates for careers in quality control, product evaluation, mill production or manufacturing supervision. Graduates are prepared for advanced study that would lead to careers in textiles, chemistry, research and engineering.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
General studies	48 credits
Professional studies	50 credits
Minor or emphasis	22 credits
Free electives	10 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—48 credits required

Course	Credit
304-101 Fundamentals of Design	3
320-210 Principles of Economics I	3
326-101 Freshman English: Composition or	
326-111 Freshman English—Honors I	3
326-102 Freshman English: Reading and Related Writing or	
326-112 Freshman English—Honors II	3
366-xxx or 367-xxx, Physical Education	2
391-100 Fundamentals of Speech	2
<i>Select 3.5 credits from the following areas: 308-132 Physiology and Anatomy (for Apparel Design Concentration); 311-115 or 311-135 Chemistry (for Textile Concentration); 372-xxx Physics.</i>	3.5
<i>Select 4 credits from the following areas: 354-xxx Applied Math or 355-xxx Math.</i>	4
<i>Select 3 credits from the following areas: 212-250 Individual and Family Relations, 303-220 Introduction to Cultural Anthropology or 387-110 Introductory Sociology.</i>	3
<i>Select 3 credits from the following areas: 479-110 General Psychology or 479-150 Humanistic Psychology.</i>	3
<i>Select 6 credits from at least two of the following areas: 304-xxx Art-non-performance, 326-xxx Literature, 338-xxx History, 360-xxx Music-non-performance, 365-xxx Philosophy, 375-xxx Political Science, 500-xxx Interdisciplinary Studies.</i>	6
<i>Select 6 credits from at least two of the following areas: 304-xxx Art-performance, 326-xxx Writing, 328-xxx or 329-xxx Foreign Language, 360-xxx Music-performance, 391-xxx Speech.</i>	6
<i>Select liberal arts elective credits not included in concentration to total a minimum of 48 credits</i>	48

MAJOR STUDIES—50 credits required from concentration selected

Concentration in:

APPAREL DESIGN

214-120 Introduction to Apparel/ Textiles/Merchandising
214-110 Principles of Apparel Design
214-140 Textiles
214-225 Clothing and Textile Industry
214-266 Apparel Construction
214-519 International Economic Trends in Textiles/Clothing
214-366 Pattern Adjustment and Fit
304-534 Fashion Illustration
214-368 Experimental Clothing
214-550 Textile Evaluation
214-398 Fashion Merchandising Field Experience
214-375 Grading Apparel Patterns
214-610 History of Costume-Ancient to European or
214-611 History of American Costume
214-680 Draping
214-617 Social/Psychological Aspects of Clothing
214-581 Functional Clothing Design
214-685 Apparel Design Studio
Select at least 5 credits from:
214-402 Undergraduate Clothing and Textile Research
214-274 Apparel Manufacturing
214-568 Engineered Tailoring
214-605 International Study Tour to the Fashion Industries
214-639 National Study Tour to Fashion Industry
214-655 Recent Developments in Clothing and Textiles

APPAREL MANUFACTURING

214-120 Introduction to Apparel/ Textiles/Merchandising
214-140 Textiles
214-225 Clothing and Textile Industry
214-519 International Economic Trends in Textile/Clothing
214-374 Apparel Manufacturing Laboratory
150-304 Principles of Business Management
354-530 Statistical Methods
214-550 Textile Evaluation
214-568 Engineered Tailoring
214-398 Fashion Merchandising Field Experience
214-375 Grading Apparel Patterns
150-514 Industrial Enterprise Practicum
Select at least 4 credits from:
214-266 Apparel Construction
214-402 Undergraduate Clothing and Textile Research
214-366 Pattern Adjustment and Fit
214-605 International Study Tour to the Fashion Industries
214-650 Textile Science
214-666 Tailoring
Select at least 5 credits from:
214-680 Draping

TEXTILE DESIGN

214-120 Introduction to Apparel/ Textiles/Merchandising
214-109 Applied Design for Family Living
214-110 Principles of Apparel Design
214-140 Textiles
214-225 Clothing and Textile Industry
214-519 International Economic Trends in Textiles/Clothing
214-695 Historic and Contemporary Fabrics
214-590 Practicum in Textile Design
214-693 Structural Design and Weaving
214-398 Fashion Merchandising Field Experience
214-492 Practicum in Textile Printing
214-610 History of Costume-Ancient to European or
214-611 History of American Costume

214-617 Social/Psychological Aspects of Clothing
214-6xx Textile Design Studio
214-690 Advanced Fiber Design
214-694 Advanced Weaving Studio
214-591 Natural Dyeing and Hand Spinning
Select at least 5 credits from:
214-266 Apparel Construction
214-368 Experimental Clothing
214-402 Undergraduate Clothing and Textile Research
214-545 Textiles for Interiors
214-550 Textile Evaluation
214-366 Pattern Adjustment and Fit
214-605 International Study Tour to the Fashion Industries
214-639 National Study Tour to Fashion Industry
214-650 Textile Science
Select at least 6 credits from:
130-140 Graphic Arts
304-100 Drawing I
304-305 Presentation Techniques

304-310 Graphic Design I
304-500 Drawing II
304-517 Printmaking I
120-504 Elementary Photography
TEXTILE TECHNOLOGY
214-120 Introduction to Apparel/Textiles/Merchandising
214-140 Textiles
214-225 Clothing and Textile Industry
215-519 International Economic Trends in Textiles/Clothing
214-541 Fabric Maintenance
354-530 Statistical Methods
214-550 Textile Evaluation
214-398 Fashion Merchandising Field Experience
214-545 Textiles for Interiors
214-650 Textile Science
214-693 Structural Design and Weaving
Select at least 6 credits from:
311-521 Textile Chemistry
214-402 Undergraduate Clothing and Textile Research

214-591 Natural Dyeing and Hand Spinning
214-605 International Study Tour to the Fashion Industries
214-694 Advanced Weaving Studio
214-695 Historic and Contemporary Fabrics
214-655 Recent Developments in Clothing and Textiles
Select at least 7 credits from:
311-201 Organic Chemistry Lecture
311-203 Organic Chemistry Laboratory
311-501 Physical Chemistry Lecture
311-531 Quantitative Analysis
311-535 Instrumental Methods of Analysis
326-347 Critical Writing
326-515 Technical Writing
326-525 Writing Technical Articles
326-546 Research Reporting

DIETETICS

This program will provide the academic background for a career as a clinical dietitian, administrative dietitian or nutrition educator in the public or private sectors. This program meets academic requirements for membership in the American Dietetic Association (ADA). In a 1985 listing of occupations where shortages exist, the field of dietetics showed a 40 percent increase to 1995.

The dietetic student receives an education with equal emphasis on the following sciences: physical and biological; behavioral and social; communication and professional. With this balance, the student can move toward the community and business management of nutrition/food service/restaurant.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 132 credits
Required in liberal studies 51 credits
Required in major studies 66 credits
Concentrations 15 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program.
4. Students must attain a grade of "C" or better in each of the courses within the Liberal Studies and Major Studies. Students must also maintain a 2.5 grade point average with Major Studies. Students will have until the second semester of their junior year to attain the 2.5 average. All transferred credits will meet this program requirement.

PROGRAM REQUIREMENTS

GENERAL STUDIES—51 credits required

Course	Credit
391-100 Fundamentals of Speech and Speech for Proficiency Exam*	2
391-206 Discussion	2
391-208 Theory of Communication	3
391-204 Techniques of Group Leadership	2
391-512 Speech Skills for Educators	2
329-103 Elementary Spanish I	4
329-104 Elementary Spanish II	4
413-444 Introduction to Group Processes	2
326-101 Freshman English: Composition*	3
326-102 Freshman English: Reading and Related Writing*	3
326-546 Research Reporting, or*	3
326-515 Technical Writing	3
355-123 Finite Mathematics with Applications, or*	4
xxx-xxx Three years of high school academic mathematics	0
421-303 Educational Psychology*	2
242-201 Teaching Techniques in Home Economics or*	2
242-240 Clinical Experience in Microteaching	1
242-341 Clinical Experiences in Schools	1
242-241 Clinical Experiences in the Community	1
120-560 Audiovisual Communications*	2
229-606 Nutrition Education*	3
354-140 Computer Concepts or*	2
354-141 Digital Computer Programming	2
212-xxx Any Human Development and Family Living Course	2
387-110 Introductory Sociology*	3
214-617 Social/Psychological Aspects of Clothing	3
303-220 Introduction to Cultural Anthropology*	3
479-110 General Psychology*	3
338-xxx Any History Course	3
320-210 Principles of Economics I*	3
375-210 Government, or*	3
375-220 State and Local Government*	3
375-310 Political Parties and Pressure Groups	3
375-320 Civil Liberties in the U.S.	3
375-260 Problems of American Foreign Policy	3
375-340 International Relations	3
311-125 Principles of Chemistry for Health Sciences,* or	5
311-135 College Chemistry I	5
311-201 Organic Chemistry Lecture*	3
311-203 Organic Chemistry Laboratory*	1
308-306 General Microbiology*	4
308-132 Physiology and Anatomy*	4
308-362 Advanced Psychology*	3
367-121 Exercise and Fitness*	1
367-xxx Any Physical Education class*	5

311-511	Biochemistry*	.....	.....	4
<i>Select 9 credits from three different areas of the following.*</i>				
304-xxx	Any Art course			
326-xxx	Any Literature course			
360-xxx	Any Music course, except 360-264, Stage Band			
365-xxx	Any Philosophy course, except 365-301, Introduction to Logic			
391-232	Introduction to The Theater or			
391-334	Contemporary Theater			
120-535	Film—History and Appreciation	.....	.....	9

MAJOR STUDIES—65 credits required

229-212	Nutrition*	.....	.....	3
229-240	Food Science*	.....	.....	4
229-410	Advanced Nutrition*	.....	.....	3
229-308	Management of Food Production*	.....	.....	3
229-618	Diet Therapy*	.....	.....	4
245-501	Food Service Administration*	.....	.....	3
245-311	Quantity Food Production*	.....	.....	3
245-222	Institutional Food Purchasing*	.....	.....	2
245-521	Food Service Equipment*	.....	.....	2
366-340	ARC Standard First Aid and Personal Safety*	.....	.....	2
150-304	Principles of Business Management*	.....	.....	3
479-582	Human Resource Management*	.....	.....	3
229-101	Dietetics as a Profession*	.....	.....	1
229-397C	Field Experience, or*	.....	.....	1
245-397E	Field Experience	.....	.....	1
354-130	Elementary Statistics, or*	.....	.....	2
354-530	Statistical Methods	.....	.....	3
229-638	Experimental Foods*	.....	.....	3
229-661	Social and Cultural Aspects of Food*	.....	.....	2

*Required courses

Select at least one concentration of 15 credits from the following:

CLINICAL NUTRITION	FOOD SERVICE ADMINISTRATION	242-620 Vocational Programs in Home Economics
229-505 Nutrition for the Aged	160-206 Accounting I	242-630 Concepts of Extension Education
229-630 Food Behavior	229-260 Menu Planning and Design	245-685 Demonstration Techniques For vocational certification:
229-633 Maternal and Child Nutrition	229-620 Food Styling	413-501 Introduction to Guidance
229-680 Community Nutrition	229-642 Advanced Foods	199-502 Principles of Vocational/ Technical/Adult Education
311-515 Food Chemistry	245-312 Restaurant Operational Management	*Required for double major in Home Economics Education.
311-612 Advanced Biochemistry (for graduate school-bound students)	245-371 Food, Beverage and Labor Cost Controls	
479-540 Psychology of Individual and Group Differences		
COMMERCIAL DIETETICS	GERIATRIC NUTRITION	NUTRITION FACILITY PLANNING
120-504 Elementary Photography	212-351 Death and the Family	140-587 Human Factors Engineering
229-620 Food Styling	212-530 Adulthood and the Family	130-180 Hospitality/Living/ Institutional Facility Planning
229-630 Food Behavior	212-680 The Aging Person	130-325 Architectural Design II (prerequisite waived)
229-642 Advanced Foods	229-505 Nutrition for the Aged	130-526 Building Construction Specifications
245-685 Demonstration Techniques	229-630 Food Behavior	170-570 Mechanical Systems
326-525 Writing Technical Articles	229-642 Advanced Foods	245-436 Commercial and Residential Lighting
COMMUNITY NUTRITION	229-680 Community Nutrition	PREGNATAL, INFANT AND CHILD NUTRITION
229-xxx Community Nutrition Programs	242-240 Clinical Experience in Microteaching or	212-124 Child Development I
229-xxx Community Nutrition Practicum	245-685 Demonstration Techniques	212-264 Child Guidance
229-505 Nutrition for the Aged	391-244 Radio Program and Production or	212-507 Parent Education/ Involvement
229-633 Maternal and Child Nutrition	391-554 TV Programming and Performance	212-524 Child Development II
229-680 Community Nutrition	120-561 Advanced Graphic Production	229-630 Food Behavior
375-220 State and Local Government	229-642 Advanced Foods	229-633 Maternal and Child Nutrition
375-310 Political Parties and Pressure Groups		229-680 Community Nutrition
CONSULTANT DIETETICS	NUTRITION EDUCATION	SECONDARY DIETARY EDUCATION
160-206 Accounting I	229-505 Nutrition for the Aged	212-xxx Mini courses in Family Life
130-180 Hospitality/Living/ Institutional Facility Planning	229-630 Food Behavior	212-124 Child Development I
150-450 Maintenance Management	229-633 Maternal and Child Nutrition	212-250 Individual and Family Relations
229-620 Food Styling	229-680 Community Nutrition	212-264 Child Guidance
242-240 Clinical Experience in Microteaching	242-301 Home Economics Curriculum*	212-350 Dynamics of Family Development
242-241 Clinical Experiences in the Community	242-240 Clinical Experience in Microteaching*	212-680 The Aging Person
245-312 Restaurant Operational Management	242-341 Clinical Experiences in the Schools*	214-109 Applied Design for Family Living
245-371 Food, Beverage and Labor Cost Controls	212-507 Parent Education/ Involvement	
413-444 Introduction to Group Process		
229-505 Nutrition of the Aged		
229-630 Food Behavior		
229-680 Community Nutrition		

214-110 Principles of Apparel Design
214-140 Textiles
214-266 Apparel Construction
242-101 Experiential Learning in Home Economics
242-444 Practicum in Teaching Home Economics
242-443 Clinical Seminar in Home Economics Education
245-250 Family Housing
245-275 Management of Family Resources
245-360 Consumer Economics
413-501 Introduction to Guidance
421-422 Principles of Secondary Education

SYSTEMS DIETETICS

354-141 Digital Computer Programming
354-xxx Computer Applications for Dietetics
354-240 Intermediate Computer Programming
354-241 Assembly Language Programming
354-341 Data Structures
355-153 Calculus I

VOCATION/FOOD SERVICE AND NUTRITION

229-620 Food Styling
242-240 Clinical Experience in Microteaching
242-301 Home Economics Curriculum
242-620 Vocational Programs in Home Economics
245-312 Restaurant Operational Management
413-501 Introduction to Guidance
421-641 Education Evaluation
199-502 Principles of Vocational/Technical/Adult Education

EARLY CHILDHOOD EDUCATION

This Early Childhood Education program provides students with the knowledge and skills needed for working with young children in educational settings. The prescribed courses meet the requirements for Nursery and Kindergarten teaching certification for the State of Wisconsin. A cooperative program with the University of Wisconsin-Eau Claire offers the opportunity for additional certification in grades 1-8.

The Early Childhood Education program places emphasis both on general education and preparation for a professional career. In the major studies, involvement with children and families begins the freshman year with observation/participation experiences in Stout's Child and Family Study Center, Day Care Facility, and/or Infant-Toddler laboratory. General education encourages exploration of a variety of fields of knowledge to provide educational experiences that will develop the ability to express one's self effectively, develop clear and critical thinking, and develop awareness of the great ideas and accomplishments of mankind.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 135 credits
- Required in general education studies 49 credits
- Required in major studies 86 credits
2. Cumulative G.P.A. of 2.50 is required for entrance to student teaching.
3. Upon entrance to student teaching, students must have on file a current physical health examination certificate and tuberculosis test.
4. Students in Early Childhood Education must demonstrate English composition and speech proficiency by earning a "C" or better in English 102 or its equivalent (or achieve a proficiency rating on an English proficiency test), and earn a "C" or better in 391-100, Fundamentals of Speech.

PROGRAM REQUIREMENTS

GENERAL EDUCATION STUDIES—49 credits required

General requirements—minimum of 16 credits

Course	Credit
326-101* Freshman English: Composition or 326-111 Freshman English—Honors I	3
326-102* Freshman English: Reading and Related Writing or 326-112 Freshman English—Honors II	3
391-100 Fundamentals of Speech*	2
479-110 General Psychology*	3
367-xxx Any Physical Education Activity Course(s)*	1
355-118 Concepts of Mathematics* or	
355-120 Introductory College Mathematics I	4
<i>Select a minimum of 8 credits from: Biology 308-122, 132, 142, 150*, 152; Chemistry 311-115 or 135; Physics 372-251, 252, 254</i>	8
<i>Select a minimum of 6 credits distributed among at least two areas:</i>	
375-210 Government; 303-250 The Human Past; 320-201 General Economics; 320-210 Principles of Economics I; 336-104 World Geography; 387-110 Introductory Sociology	6
<i>Select a minimum of 13 credits: 326-xxx Literature (minimum of 3 credits); 338-105, 120, 121, 140, 141, 210 History (minimum of 3 credits); 326-339, 328-101, 329-103, 365-201, 365-301, 300-255 and 100-500 Language and Philosophy (minimum of 2 credits)</i>	13
<i>Select a minimum of 5 credits from Art, Music, Media, Speech, Theater, with and without direct experience</i>	5
Electives	1

MAJOR STUDIES—minimum of 86 credits

Career Development 1 credit

212-100 Introduction to Early Childhood Programs*	1
Developmental Processes, Health and Safety 15-16 credits	
212-124 Child Development I*	3
212-160 Childrens Health and Safety	1
212-250 Individual and Family Relations*	3
431-532 Psychology of Exceptional Child*	2
229-136 Nutrition for Young Children*	2
366-340 ARC Standard First Aid and Personal Safety*	2
421-303 Educational Psychology or 479-530 Psychology of Learning	2-3
Professional Education 54 credits.	
120-560 Audiovisual Communications*	5
212-168 Fostering Language Development in Young Children*	3
212-264 Child Guidance*	2
212-265 Child Guidance Practicum*	1
212-274 Creative Activities For Young Children*	2
212-294 Teaching/Learning Strategies in Early Childhood**	5
212-344 Science, Mathematics and Social Sciences—Early Childhood**	4
212-433 Language Arts/Reading—Early Childhood Education*	3
212-480A Student Teaching in Preschool Programs ¹	4
212-480B Student Teaching in Kindergarten ¹	4
212-490 Clinical Seminar in Preschool Programs*	5
212-491 Clinical Seminar in Kindergarten Education*	5
212-507 Parent Education/Involvement*	2
212-520 Theories of Early Childhood Education*	2

212-545	Exceptional Needs and Programming—Early Childhood*	3
212-665	Administration—Early Childhood Education Programs*	3
212-685	Seminar—The Culturally Distinct Child and Family*	3
326-300	Literature for Young Children*	3
360-204	Music for the Young Child*	3
367-265	Physical Activities for Preschool Children*	2
421-303	Educational Psychology*	2

Elective minimum 9-10

Students may use electives to fulfill requirements for one of the following concentrations: Supervision and Training; Day Care Programming; Kindergarten Education; Education of Children with Special Learning Needs; Administration; and Elementary Education Cooperative Program with University of Wisconsin-Eau Claire.

*Required courses with grade of "C" or better.

**Required major courses with a grade of "B" or better. If less than "B" is earned, the course must be repeated with a grade of "B" or better prior to student teaching.

¹Students must have a cumulative GPA of 2.50 for acceptance into student teaching and must make written application to the program director prior to the academic year in which the student plans to enroll for student teaching.

COOPERATIVE PROGRAM IN ELEMENTARY EDUCATION AND EARLY CHILDHOOD EDUCATION

A two-semester, 26.5-semester hour program permits Stout students in the N-K certification program to add 1-8 certification at UW-Eau Claire prior to graduation.

The following requirements may be met at either institution:

	UW-Eau Claire	UW-Stout
PSYC 334	Psychology of the Exceptional Child	600-xxx Any Educational Media Course
SPED 400	Educational of Exceptional Child	431-532 Psychology of the Exceptional Child
SOC 301	Marriage and Family (Elective)	212-250 Individual and Family Relations (Elective)
Psyc 331	Child Psychology	212-124 Child Development I
LMED 205	Children's Literature	326-300 Literature for Young Children
MUSI 240	Music in the Elementary School	360-204 Music for the Young Child
		120-560 Audiovisual Communications
		15 credits

The following requirements must be taken at UW-Eau Claire:

Semester I

ELED 306	Methods in Math	2
ELED 307	Methods in Language Arts	2
ELED 308	Methods in Science	2
ELED 309	Methods in Social Studies	2
ELED 310	Methods in Reading	3
MATH 206	Math for Elementary Teachers	4
		15 credits

Semester II

ELED 330	Diagnosis and Remediation of Reading Problems	3
ELED 321	Evaluation in the Elementary School	2
ELED 435	- ELED 436, or both—Student Teaching	3 (minimum) credits
		8

FASHION MERCHANDISING

Fashion Merchandising is a four-year program designed to prepare students for entry into the retail department store specialty and/or low margin store business. Program requirements are structured to provide the student with specific retailing skills and comprehension; broad knowledge of general business in areas such as marketing, accounting, economics and advertising; and self-growth through a variety of liberal studies such as mathematics, humanities, social sciences, English, science and communications. In addition to a Fashion Merchandising major, many students elect a minor in Business, Speech or Journalism.

Career possibilities available to Fashion Merchandising majors are limited only to the individual's capabilities. But a typical, not exclusive, broad list would include: group manager, store manager, buyer, divisional merchandise manager, resident buyer, director of personnel, sales representative, promotion-publicity manager, fashion director and operations manager. There is little limitation to the type of merchandise, which typically includes: apparel, gifts-china, fashions for the home, such as interiors and domestics, shoes, cosmetics, furniture, fabrics, and entertainment centers. Independent study projects or transfer requirements must have approval of the program director.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	45 credits
Required in major studies	66 credits
Electives	19 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—45 credits required

304-101 Fundamentals of Design	3
326-101 Freshman English—Composition*	3
326-102 Freshman English—Reading and Related Writing*	3
387-110 Introductory Sociology	3
391-100 Fundamentals of Speech*	2
Select 2 credits from:	
200-325 Computer Applications in Home Economics; 354-140 Computer Concepts; 600-580 Microcomputer Applications—Words/Data	2
Select 3 credits from:	
212-250 Individual and Family Relations; 303-xxx Any Anthropology; 365-375 Personal and Professional Ethics	3
Select at least 2 credits from:	
304-xxx Any Art; 328-xxx Any French; 329-xxx Any Spanish; 360-xxx Any Music; 391-232 Introduction to the Theater	2
Select at least 4 credits from:	
308-xxx Any Biology; 311-115 General Chemistry; 372-xxx Any Physics	4
Select 326-xxx Any Writing*	3
Select 326-xxx Any Literature	3
Select 3 credits from:	
336-104 World geography; 338-xxx Any History; 375-xxx Any Political Science..	3
Select 4 credits from:	
355-119 Business Mathematics; 355-120 Introductory College Mathematics I	4
Select 366-xxx Any Physical Education	1
Select 367-xxx Any Physical Education	1
Select 2 credits from*:	
391-100 Persuasive Speaking; 391-206 Discussion; 391-210 Interpersonal Speech Communication; 391-508 Speech Skills for Business and Industry	2
Select 3 credits from:	
479-110 General Psychology; 479-150 Humanistic Psychology	3

*Minimum cumulative grade point average of 2.5 is required for the group of courses marked with the asterisk.

MAJOR STUDIES—66 credits required

Note: Students completing major studies courses in this cluster must earn at least a "C" grade in each course and must have at least a cumulative grade point average of 2.5 on all work taken in this cluster.

200-449 Cooperative Education Program or 214-426 Fashion Merchandising Practicum	3-6
214-120 Introduction to Apparel/Textiles/Merchandising	2
214-227 Basic Merchandising	3
214-230 Merchandise Planning and Control	4
214-329 Fashion Merchandising Promotion	3
214-330 Home Furnishings Merchandising	2
214-339 Apparel Merchandising	1
214-398 Fashion Merchandising Field Experience	2
214-435 Merchandising Systems	1
214-527 Store Management	3
214-625 Mass Merchandising	2
Note: Student completing major studies courses in this cluster must earn at least a 2.5 cumulative grade point average on all work taken in this cluster.	
160-206 Accounting I	3
160-207 Accounting II	3
160-330 Principles of Marketing	3
160-370 Principles of Advertising	3
320-210 Principles of Economics I	3
320-215 Principles of Economics II	3

Select at least 2 credits from:	
150-600 Organizational Leadership; 479-579 Public Relations;	2
479-582 Human Resource Management	
Select at least 3 credits from:	
160-260 Introduction to International Business; 160-318 Business Law I; 160-334 Salesmanship and Sales Management; 160-337 Purchasing; 160-585 International Marketing	3
Note: There are no additional grade point average requirements for courses in this cluster.	
214-112 Aesthetics of Apparel	2
214-140 Textiles	3
214-200 Fashion Fabrics	1
214-202 Quality Analysis of Sewn Products	3
214-617 Social/Psychological Aspects of Clothing	3
245-360 Consumer Economics	3
Select at least 2 credits from:	
214-xxx History and Trends in Retail; 214-610 History of Costume—Ancient to European; 214-611 History of American Costume	2
Select additional elective credits with adviser's approval to bring total minimum credits for the degree to	130

FOOD SERVICE ADMINISTRATION

This program meets academic requirements for membership in the American Dietetic Association (ADA).

The program in Food Service Administration provides the academic background for a career as an administrator in large quantity food production and service facilities. Areas in which a food service administrator would be concerned in serving nutritional diets to large groups of people (100 or more) are: industrial feeding; airline feeding; school food service; university food service; nursing home and hospital food service; day care and geriatric centers; fast food service; commissary food production; vending food operation; and supermarket management. Concentrations available in non-traditional employment are: Food Service Equipment Design, Food Service Equipment Manufacturing, Food Service Equipment Marketing and Sales, and Food Service Facility Planning.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 130 credits
Required in general studies 68-73 credits
Required in major studies 45-47 credits
Electives 10-17 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program.
4. Students must attain a grade of "C" or better in each of the courses within Liberal Studies, Major Studies and concentrations. These requirements also apply to transfer credits.

PROGRAM REQUIREMENTS

GENERAL STUDIES—68-73 credits required

Course		Credit
391-100	Fundamentals of Speech and Speech Proficiency Exam*	2
391-206	Discussion	2
391-208	Theory of Communication	3
391-204	Techniques of Group Leadership	2
391-512	Speech Skills for Educators	2
413-444	Introduction to Group Processes	2
326-101	Freshman English: Composition* or	
326-111	Freshman English — Honors I	3
326-102	Freshman English: Reading and Related Writing* or	
326-112	Freshman English — Honors II	3
326-546	Research Reporting* or 326-515 Technical Writing*	3
355-120	Introductory College Mathematics I* or	4
xxx-xxx	Three years of high school academic mathematics*	0
421-303	Educational Psychology*	2
242-201	Teaching Techniques in Home Economics* or 242-240 Clinical Experience in Microteaching	1-2
242-341	Clinical Experiences in Schools	1
242-241	Clinical Experiences in the Community	1
600-560	Audiovisual Communications*	2
354-140	Computer Concepts* or 354-141 Digital Computer Programming	2
354-130	Elementary Statistics or 354-530 Statistical Methods	2
212-xxx	Any Human Development and Family Living Course	
387-110	Introductory Sociology*	3
214-617	Social/Psychological Aspects of Clothing	3
303-xxx	Any Anthropology*	3
479-110	General Psychology*	3
338-xxx	Any History course	3
320-210	Principles of Economics I*	3
320-215	Principles of Economics II*	3
320-420	Labor Economics*	3
375-210	Government* or 375-310 Political Parties and Pressure Groups*	3
311-125	Principles of Chemistry for Health Sciences	5
311-201	Organic Chemistry Lecture*	3
311-203	Organic Chemistry Laboratory*	1
308-306	General Microbiology*	4
308-132	Physiology and Anatomy*	4
229-212	Nutrition* (*)	3

*Required Courses

(*) 311-201 Organic Chemistry Lecture and 308-132 Physiology and Anatomy, prerequisites.

Select 9 credits from three different areas of the following*

304-101	Fundamentals of Design	3
326-xxx	Any Literature course	
360-xxx	Any Music course, except 360-264, Stage Band	
365-xxx	Any Philosophy course, except 365-301, Introduction to Logic	
391-232	Introduction to the Theater or	
391-334	Contemporary Theater	

120-535 Film—History and Appreciation
367-xxx Physical Education (Activity)

MAJOR STUDIES—45-47 credits required

229-101	Dietetics as a Profession*	1
229-240	Food Science* (*)	4
245-311	Quantity Food Production*	3
229-661	Social and Cultural Aspects of Food*	2
229-308	Management of Food Production*	3
245-312	Restaurant Operational Management*	3
229-260	Menu Planning and Design*	2
245-x98	Hotel and Restaurant Field Experience*	2
245-222	Institutional Food Purchasing*	2
245-371	Food, Beverage and Labor Cost Controls*	3
245-501	Food Service Administration*	3
245-521	Food Service Equipment*	2
245-656	Microwave Oven*	2
160-206	Accounting I*	3
160-207	Accounting II*	3
160-318	Business Law I	3
160-330	Principles of Marketing*	3
150-304	Principles of Business Management*	3
479-582	Human Resource Management*	3
366-340	ARC Standard First Aid and Personal Safety*	2

*Required courses

(*) 311-201 Organic Chemistry Lecture, prerequisite

CONCENTRATIONS:

FOOD SERVICE EQUIPMENT DESIGN

130-110	Drafting or
130-311	Technical Drafting
170-205	Design for Industry
304-330	Industrial Design I
304-340	Industrial Design II
245-6xx	Food Service Analysis Seminar

FACILITY PLANNING

130-180	Hospitality/Living/
	Institutional Facility Planning
140-587	Human Factors Engineering

130-526 Building Construction Specifications

170-570 Mechanical Systems

245-436 Commercial and Residential

Lighting

214-109 Applied Design for Family

Living or

214-545 Textiles for Interiors

130-325 Architectural Design II

FOOD SERVICE EQUIPMENT MANUFACTURING

130-110	Drafting or
372-xxx	Physics for Home Economics
170-202	Metals
170-250	Plastics I

170-209 General Finishing
245-6xx Food Service Analysis Seminar

FOOD SERVICE EQUIPMENT MARKETING AND SALES

130-180	Hospitality/Living/
	Institutional Facility Planning
160-334	Salesmanship and Sales Management
160-370	Principles of Advertising
160-679	Marketing Research
245-6xx	Food Service Analysis Seminar

ELECTIVES—10-17 credits required. Select from courses offered at Stout or those approved for transfer.

HOME ECONOMICS IN BUSINESS

Home Economics in Business is a four-year program leading to a Bachelor of Science degree. The goal of this program is to develop competencies which will enable a person to function effectively as a member of a business organization. This task is accomplished by a combination of classes from Liberal Studies, Major Studies, General Electives and/or Minor.

Liberal Studies provides broad learning experiences in art, science, English, mathematics and the behavioral sciences. The courses taken in Major Studies depend on the concentration chosen. The five concentrations from which a student may select are: Food and Beverage Merchandising, Foods/Equipment, Food Science, Consumer Affairs or Interior Decorating. The number of elective credits varies depending on the number of credits required to complete the concentration. These electives can be used to expand knowledge in an area of interest, explore selected disciplines or to complete a Minor.

The Home Economics in Business program prepares individuals for various careers in business and public service in areas such as public relations, banking and finance, sales, food processing, food puréeing, home equipment manufacturing, supermarket management, journalism and interior decoration.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	128 credits
Required in general studies	61 credits
Required in major studies (depending on concentration)	48-56 credits
Electives or minor	1-9 credits

PROGRAM REQUIREMENTS

GENERAL STUDIES—61 credits required

Course	Credit
160-206 Accounting I	3
212-115 Introduction to Home Economics in Business	1
212-xxx Senior Seminar in Home Economics in Business	1
326-101 Freshman English—Composition or	
326-111 Freshman English—Honors I	3
326-102 Freshman English—Reading and Related Writing or	
326-112 Freshman English—Honors II	3
326-346 Informational Writing	3
391-100 Fundamentals of Speech	2
391-508 Speech Skills for Business and Industry	2
Select 3 credits from:	
304-xxx Any Art; 360-xxx Any Music; 391-xxx Any Theater; 120-xxx Any Media	3
Select 3 credits from:	
326-348 American Literature; 326-360 Modern American Literature; 326-372 Women Writers; 326-381 Recent American Literature; 328-xxx Any Foreign Language; 329-xxx Any Foreign Language	3
160-330 Principles of Marketing or CLEP Score on Marketing	3
3xx-xxx Any course with 3xx Prefix	3
Select 3 credits from:	
338-xxx Any History; 375-xxx Any Government	3
Select 6 credits from:	
212-250 Individual and Family Relations; 303-220 Introduction to Cultural Anthropology; 387-110 Introductory Sociology; 479-110 General Psychology	6
Select 5 credits to include at least one laboratory from:	
308-xxx Any Biology; 311-xxx Any Chemistry; 372-xxx Any Physics	5
Select 3 credits from:	
320-201 General Economics; 320-210 Principles of Economics I	3
Select 2 credits from:	
354-141 Digital Computer Programming; xxx-xxx Any Advance Computer Course	2
Select 3 credits from:	
365-201 Introduction to Philosophy; 365-301 Introduction to Logic; 365-375 Personal and Professional Ethics; 365-550 Ethical Valuing (Inactive)	3
Select 2 credits which must include physical activity from:	
366-1xx Any 100 Level Physical Education, 367-1xx Any 100 Level Physical Education	2
Select 3 credits from the following:	
320-420 Labor Economics; 320-421 Collective Bargaining and Labor Relations; 479-483 Human Resource Development; 479-582 Human Resource Management	3
Select 4 additional credits of mathematics appropriate to the concentration.	

MAJOR STUDIES—Courses will be selected according to concentration(s) chosen.

CONCENTRATIONS—48-56 credits required

To complete the program, a student selects one or more concentrations. Five concentrations are available:

FOOD and BEVERAGE MERCHANDISING		245-xxx Beverage Industry Purveying Systems	Select 3 credits from the following:
229-124 Foods or		160-334 Salesmanship and Sales Management or	160-318 Business Law I or
229-240 Food Science		214-xxx Visual Merchandising	160-355 Principles of Risk Management or
245-222 Institutional Food Purchasing		160-370 Principles of Advertising	245-625 Hospitality Industry Law and Liability
200-xxx History and Appreciation		170-280 Packaging Fundamentals	Select one of the following:
Wines, Spirits		229-650 Food Processing	160-340 Business Finance or
245-311 Quantity Food Production		320-215 Principles of Economics II	245-670 Hospitality Financial Analysis/Budget/Forecasting
245-370 Hotel and Restaurant Accounting		308-206 Food Service and Environmental Sanitation	
229-212 Nutrition		245-x98 Hotel and Restaurant Field Experience	
245-521 Food Service Equipment			

FOODS/EQUIPMENT

229-124 Foods or
229-240 Food Science
229-212 Nutrition
229-308 Management of Food Production
229-446 Food Preservation
229-620 Food Styling
229-638 Experimental Foods
229-642 Advanced Foods
229-661 Social and Cultural Aspects of Food
245-311 Quantity Food Production
308-306 General Microbiology
308-506 Food Microbiology
311-125 Principles of Chemistry for Health Sciences or
311-135 College Chemistry I
311-201 Organic Chemistry Lecture
311-203 Organic Chemistry/ Laboratory
372-211 Introduction to Physics
245-250 Family Housing
245-355 Energy and Household Equipment
245-521 Food Service Equipment
245-655 Major Kitchen Appliances
245-656 Microwave Oven
245-685 Demonstration Techniques
355-120 Introductory College Mathematics I

FOOD SCIENCE

170-280 Packaging Fundamentals
372-211 Introduction to Physics
308-132 Physiology and Anatomy
308-306 General Microbiology
308-506 Food Microbiology
311-125 Principles of Chemistry for Health Sciences or
311-135 College Chemistry I
311-201 Organic Chemistry Lecture
311-203 Organic Chemistry/ Laboratory
229-212 Nutrition
229-240 Food Science
311-511 Biochemistry
229-410 Advanced Nutrition
229-446 Food Preservation
229-638 Experimental Foods
229-642 Advanced Foods
229-650 Food Processing
245-311 Quantity Food Production
311-515 Food Chemistry
311-531 Quantitative Analysis
311-535 Instrumental Methods of Analysis
355-120 Introductory College Mathematics I

CONSUMER AFFAIRS

Required 28 credits
140-590 Product/Service Liability
212-xxx Human Development
242-201 Teaching Techniques in Home Economics
245-360 Consumer Economics

245-662 Consumer Protection

245-663 Consumer Law
320-215 Principles of Economics II
320-325 Economic and Business Statistics
326-306 Reporting & News Writing or
326-346 Informational Writing or
326-347 Critical Writing
326-425 Copy Editing and Preparation
479-579 Public Relations
Select 3 credits from the following:
160-334 Salesmanship and Sales Management
160-370 Principles of Advertising
160-679 Marketing Research
Specific Consumer areas (each student will complete credits in two of the following areas):
Clothing and Textiles - 16 credits

214-140 Textiles
214-519 International Economic Trends in Textiles/Clothing
214-541 Fabric Maintenance
214-550 Textile Evaluation
214-617 Social/Psychological Aspects of Clothing
214-650 Textile Science or
311-521 Textile Chemistry
In General areas take:
311-115 General Chemistry
355-120 Introductory College Mathematics I

Economics Institutions - 13 credits
245-565 Consumer Aspects of Life Insurance
245-566 Consumer Aspects of Health Insurance
245-660 Consumer Credit
245-676 Family Finance
320-335 Personal Securities Investment
320-435 Money and Financial Markets
320-445 Public Finance
In General areas take:
355-120 Introductory College Mathematics I
Food and Nutrition - 14-16 credits
229-124 Foods
229-212 Nutrition
229-650 Food Processing
Select one of the following courses:
229-630 Food Behavior or
229-661 Social and Cultural Aspects of Food
Select one of the following courses:
229-505 Nutrition for the Aged or
229-633 Maternal and Child Nutrition or
229-680 Community Nutrition
In General areas take:
311-115 General Chemistry I
355-120 Introductory College Mathematics I
Energy and Equipment - 13-14 credits
245-355 Energy and Household Equipment
245-656 Microwave Oven

Select one of the following courses:
245-521 Food Service Equipment

245-655 Major Kitchen Appliances
Select one of the following courses:
170-372 Heating and Air Conditioning or
245-xxx Energy Management in the Home

In General areas take:
355-120 Introductory College Mathematics I
372-211 Introduction to Physics
Habitat - 13 credits
245-250 Family Housing
245-350 Psycho-Socio Aspects of Housing
245-xxx Housing Economics and Policy
Select 3 credits from the following:

245-436 Commercial and Residential Lighting
245-455 Kitchen Planning
245-681 Special Problems in Habitational Resources
245-xxx Independent Study
In General areas take:
355-120 Introductory College Mathematics I
372-211 Introduction to Physics

INTERIOR DECORATING

304-100 Drawing I
304-101 Fundamentals of Design
130-221 Architectural Design I
245-250 Family Housing
245-436 Commercial and Residential Lighting (Fall only)
304-202 Introduction to Art (Fall only) or
304-522 Modern Art (Fall only)
304-204 Interior Design
304-205 Problems in Interior Design
304-305 Presentation Techniques
304-503 Design
304-532 Economics of House Furnishing (Fall only)
304-533 Period Furnishings (Fall only)
214-140 Textiles
214-227 Basic Merchandising
214-330 Home Furnishings Merchandising
214-230 Merchandising Planning & Control
214-527 Store Management
214-545 Textiles for Interiors
160-334 Salesmanship and Sales Management
335-119 Business Mathematics

ELECTIVES—1-9 credits required

HOME ECONOMICS EDUCATION

The B.S. degree in Home Economics Education opens career options in a variety of educational settings. It is a certification program that prepares students to teach in a middle school, junior high school or senior high school. In addition, it prepares students as Extension Agents and 4-H Youth Agents. Vocational/technical school teaching provides yet another focus of preparation and opportunity for Home Economics Education majors. Diversified home economics courses form a large portion of the program's academic work. The program consists of major studies, liberal studies and professional studies components. Through wise use of electives, there is opportunity to build minors and/or concentrations. Cooperatively planned work experiences can be used in the program to strengthen credentials for certification.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 135 credits
Required in liberal studies 44 credits
Required in major studies 54 credits
Required in professional studies 26-28 credits
Electives 11-13 credits
2. There are four planning systems which encourage individualized education and allow for maximum flexibility within the guidelines for a certifiable program of 135 credits. When planning the sequence of experiences leading to the Bachelor of Science degree with a major in Home Economics Education, the student should select and organize the classes within one of four planning systems. Depending on the program selected by the student, elective credits can be used to obtain a minor (22 credits) or concentration (10-18 credits) within a certain area. A combination of a minor and a concentration is also possible, but may require additional time beyond the usual four years.
3. To qualify for student teaching, the candidate must fulfill the English adequacy, the speech proficiency and the health requirements and must have a minimum cumulative grade point average of 2.25.
4. Concentrations:

APPAREL, TEXTILES AND DESIGN - Preparation for teaching semester or occupation-oriented courses at secondary and post-secondary levels.

AVOCATIONAL INTERESTS - Preparation for employment in schools, community programs, craft schools, workshops, campus, hospitals, special projects for the aged and other interest groups related to Home Economics knowledge and skills.

CAREER DEVELOPMENT - Provides teachers wider employment opportunities in working with Career Development either at secondary level or as an elementary consultant.

CONSUMER EDUCATION - Preparation for teaching semester courses and gives greater depth in teaching consumer education.

EXTENSION AND COMMUNITY SERVICES - Preparation for

employment in cooperative extension education and teaching in varied community programs.

FAMILY LIFE AND CHILD DEVELOPMENT - Preparation for teaching specialized courses at elementary, middle, secondary and post-secondary levels. Fulfills one of the greatest contemporary needs in education. Opportunities open for both men and women.

FOOD SERVICE AND NUTRITION - Popular with both men and women. Preparation for teaching semester or occupational-oriented courses at secondary and post-secondary levels.

HABITAT, EQUIPMENT AND MANAGEMENT - Preparation of men and women to teach semester courses or become employed in business and industry. Leads to further graduate work.

INDIVIDUALLY DESIGNED - The student in consultation with the program adviser design the concentration to meet individual needs.

MIDDLE SCHOOL - Certifiable program for teaching Home Economics in the middle school.

OCCUPATIONAL-ORIENTED EDUCATION - Preparation of men and women to teach occupation-oriented programs in secondary and post-secondary schools.

REHABILITATION - Provides opportunities of employment for teaching Home Economics to the handicapped.

SPECIAL FIELDS - Certifiable program for education of the slow learner in Home Economics.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—44 credits required

Course	Credit
304-xxx Art elective	3
308-132 Physiology and Anatomy	4
311-115 General Chemistry or 311-135 College Chemistry I	5
320-201 General Economics	3
326-101 Freshman English: Composition or 326-111 Freshman English—Honors I	3
326-102 Freshman English: Reading and Related Writing or 326-112 Freshman English—Honors II	3
326-xxx English elective	3
367-1xx Physical Education elective	2
387-110 Introductory Sociology or 303-220 Introduction to Cultural Anthropology	3
391-100 Fundamentals of Speech	2
479-110 General Psychology	3
Select any 3-credit course in History or Government	3
Liberal Studies electives	7

MAJOR STUDIES—54 credits required

212-264 Child Guidance	2
212-124 Child Development I	3
212-250 Individual and Family Relations	3
212-350 Dynamics of Family Development	3

212-xxx	Family Life elective	1
214-110	Principles of Apparel Design	1
214-140	Textiles	3
214-266	Apparel Construction	3
214-109	Applied Design for Family Living	2
229-124	Foods	4
229-212	Nutrition	3
229-308	Management of Food Production	3
245-275	Management of Family Resources	3
245-250	Family Housing	3
245-360	Consumer Economics	3
245-xxx	Any Equipment Course	2-3
	Major Studies electives (minimum)	12

PROFESSIONAL EDUCATION—26-28 credits required

242-241	Clinical Experiences in the Community	1
242-101	Experiential Learning in Home Economics	1
242-201	Teaching Techniques in Home Economics	2
242-240	Clinical Experience in Microteaching	1
242-341	Clinical Experiences in Schools	1
242-301	Home Economics Curriculum	3
242-443	Clinical Seminar in Home Economics Education	2
242-444	Practicum in Teaching Home Economics or 242-488 Internship Teaching	6-8
413-501	Introduction to Guidance or 421-590 Mental Health in the Schools..	2
421-303	Educational Psychology or 421-422 Principles of Secondary Education ..	2
431-630	Mainstreaming Special Students	3
421-682	Reading Methods—Secondary School	2

ELECTIVES—11-13 credits required from courses offered at Stout or those approved for transfer.

HOME ECONOMICS GENERAL

The Home Economics General program serves a dual purpose: it provides a temporary major for the student who is undecided which of the nine career-specific programs to choose; it provides a degree granting program for the Home Economics student who shows high leadership potential and who is not concerned with a curriculum designed to meet career-specific needs.

GENERAL REQUIREMENTS—TEMPORARY MAJOR

A student who is undecided about which program to choose works with an adviser from the School of Home Economics in selecting course work. The student must select a career-specific program before the end of the sophomore year.

GENERAL REQUIREMENTS—B.S. DEGREE PROGRAM MAJOR:

Each student admitted to pursue the degree program will plan an individualized curriculum. The student will be admitted to Home Economics General. At the end of a year and a half, the student will be eligible to apply for admittance to the degree program. The student will fill out a formal application which will be reviewed by the Program Director and the Home Economics General Program Committee. Each student applicant will be interviewed by the committee. The committee will decide which applicants will be admitted to the degree program.

Total for graduation	128 credits
Required in liberal studies	50 credits
Required in major studies	44 credits
Required in leadership component	10 credits
Electives and/or minor	24 credits

LIBERAL STUDIES—50 credits required

391-100	Fundamentals of Speech	2
326-101	Freshman English: Composition	3
326-102	Freshman English: Reading and Related Writing	3
355-xxx	Mathematics	4
(Required only if high school background did not include two years of college-oriented math.)		

Select the remaining credits 38-42 from the following categories:

Humanities 8-10 credits. Choose from the following: English Literature, Foreign Language (Literature), History, Art History and Art Appreciation, Music Appreciation or Theory, Philosophy, and Introduction to Theater.

Natural Sciences and Mathematics 8-10 credits. Choose from the following: Biology, Chemistry, Mathematics, and Physics.

Social Sciences 12-14 credits. Choose from the following: Anthropology, Economics, Political Science, Psychology, and Sociology.

Arts 8-10 credits. Choose from the following: Art, Advanced and Creative Writing, Music (performance courses), Modern Dance, and Speech (Oral Interpretation and Theater).

MAJOR STUDIES—44 credits required

Family is the central concern of all Home Economists. The knowledge and skills developed in Home Economics courses can be conceptualized by examining the family and its immediate physical environment in a tangible, dynamic context. Course work for this component is described in terms of People, Habitat and Interaction:

People—The study of individuals and their development in families as discussed in applied course work that builds on knowledge gained in General Education courses. Course work dealing with family formation, development of children, adult development, family structure and family roles would be appropriate.

Habitat—The study of the material context of family life—food, textiles, furnishings, housing, and equipment. Course work on the immediate physical environment—territories, food, textiles, furnishings, equipment, housing and their relationship to the larger environment would be appropriate.

Interaction—The study of action and reactions that constitute the process of interaction between family members and the near environment. Course work in family relationships, decision-making and conflict resolution, leisure, work and ceremonial or symbolic events.

LEADERSHIP COMPONENT—10 credits required

Students are required to select one course from Groups A, B, and C and both courses in Group D.

(A) Understand the Characteristics of Individuals and Groups

212-535	Seminar on Self-Growth	2
387-250	Social Psychology	3

(B) Utilize Communication Skills

326-515	Technical Writing	3
391-200	Persuasive Speaking	2
391-208	Theory of Communication	3
391-508	Speech Skills for Business and Industry	2
391-206	Discussion	2

(C) Utilize Leadership Techniques

391-204	Techniques of Group Leadership	2
479-570	Assertive Training Procedures	2
500-100	Applied Student Leadership	2
150-600	Organizational Leadership	3
300-255	Creative Problem Solving	2

(D) Demonstrate Leadership in Home Economics

200-499	Independent Study	1-3
200-299	Independent Study in Home Economics	1-2

ELECTIVES AND/OR MINOR—24 credits required

HOTEL AND RESTAURANT MANAGEMENT

Hotel and Restaurant Management is one of America's fastest growing industries. Each year, the amount of leisure time increases for thousands of Americans, and with that increase, comes a growing demand on the hospitality industry. As existing lodging and dining facilities expand, new businesses are being started to accommodate more and more people who want new and better hospitality services.

Stout's specialized mission enables Hotel and Restaurant Management majors to receive a variety of training. The four-year curriculum is structured to allow for both practical and theoretical training, giving students specific skills needed to have successful management careers. The program also provides studies in the liberal arts to give graduates a flexible background, enabling them to adapt to a wide variety of situations in today's rapidly changing society.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation 128 credits
Required in liberal arts 55 credits
Required in professional studies 58 credits
Electives in professional studies 15 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program during the junior year and/or the summer between the junior and senior year. A minimum of 2 credits for 320 hours of approved work experience is required.
4. Students must attain a grade of "C" or better in each of the courses within the program except the three credits of electives. It is recommended that an "F" or "D" grade be repeated the following semester. In order for transfer courses to be accepted in the program, this same grade requirement must be met.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—55 credits required

Course	Credit
Required: (26-27 credits)	
320-210 Principles of Economics I	3
375-xxx Any Political Science or 320-xxx Any Additional Economics	3
320-325 Economics and Business Statistics or 354-130 Elementary Statistics	2-3
326-101 Freshman English: Composition	3
326-102 Freshman English: Reading and Related Writing	3
355-119 Business Mathematics or 355-123 Finite Mathematics with Applications (based upon results of UW System Math Placement Test)	4
355-120 College Mathematics or Higher	4
366-340 First Aid or any 366 or 367	2
391-100 Fundamental of Speech	2
<i>Select 2 credits from the following:</i>	2
212-535 Seminar on Self Growth; 391-204 Techniques of Group Leadership; 391-208 Theory of Communication; 391-210 Interpersonal Speech	4-6
<i>Select 4-6 credits from the following (must include one laboratory experience). .</i> 308- Biology; 311- Chemistry; 372- Physics	4-6
<i>Select 3 credits from the following</i>	3
479-110 General Psychology; 479-150 Humanistic Psychology; 479-281 Environmental Psychology	3
<i>Select 3 credits from the following:</i>	3
212-250 Individual and Family Relations; 303-220 Cultural Anthropology; 387-110 Introductory to Sociology	3
<i>Select 5 credits from at least two of the following areas</i>	5
304- Art History; 304- Art; 326- Literature; 328, 329- Foreign Language; 338- History; 360- Music (non-performance); 500- Interdisciplinary Studies	5
<i>Select 3 credits from the following:</i>	3
336-104 World Geography; 338-120 Early United States History; 338-121 Modern United States History	3
<i>Select 3 credits from the following:</i>	3
365-301 Introduction to Logical Thinking; 365-375 Professional Ethics	3
<i>Select 3 credits from the following:</i>	3
326-320 Business Writing; 326-346 Informational Writing; 326-347 Critical Writing	3
<i>Electives:</i>	
<i>Select 3 additional credits from any department within the University.</i>	3

PROFESSIONAL STUDIES REQUIRED*

Operational Management: (37 credits)

130-180 Hospitality Facility Planning	2
150-450 Maintenance Management	2
160-318 Business Law I	3
229-124 Foods	4
229-308 Management of Food Production	3
245-100 The Role of Management in the Hospitality Industry	2

245-222	Institutional Food Purchasing	2
245-240	Introduction to Tourism and the Travel Industry	2
245-311	Quantity Food Production	3
229-550	Fast Food Operations or 245-312 Restaurant Operational Management	3
245-341	Tourism Goods and Services or 245-344 Hospitality Marketing and Sales	3
245-498	Field Experience	2
245-600	Integrated Management Systems-Hospitality	2
245-625	Hospitality Industry Law and Liability	3
308-206	Food Service and Environmental Sanitation	1

Personnel Management: (9 credits)

245-205	Hospitality Organization Management	3
<i>Select 6 credits from the following:</i>		
245-626	Hospitality Industry Employee and Labor Relations	2
150-600	Organizational Leadership	3
479-582	Human Resource Management	3

Financial Management: (12 Credits)

160-206	Principles of Accounting I	3
245-370	Hotel and Restaurant Accounting	3
245-371	Food, Beverage and Labor Cost Controls	3
245-670	Hospitality Financial Analysis Budget Forecasting	3

Select 15 credits of professional electives with program director approval 15

*Grade Requirement - All courses require a grade of "C" or better except the three additional electives from any department of the University.

Students must maintain a 2.5 grade point average within major studies. Students will have until second semester of sophomore year to attain a 2.5 average.

SCHOOL OF LIBERAL STUDIES

Dr. Gerane T. Dougherty, Dean

APPLIED MATHEMATICS

The role of mathematics in our highly scientific-technological society is basic and essential. Mathematical thought and modeling are valued tools in our sophisticated industrial community. The application of mathematics to industry and business to meet society's needs is increasing. This growth and demand continues to create a need for graduates with training in Applied Mathematics.

The program in Applied Mathematics provides: (1) a strong foundation in academic mathematics; (2) computational concepts and techniques in computer science, statistics and mathematical models; (3) experiences in areas where mathematics, computers and/or statistics are utilized; and (4) a broad offering of liberal arts courses.

At the completion of the freshman year or after entering the Applied Mathematics program, all students prepare and submit a tentative plan or guide for their undergraduate program. This plan is developed through consultation with an academic adviser and the Program Director. The ultimate plan is developed to meet the student's professional objectives and goals through the appropriate selection of courses within the major studies and the desired related area in which mathematics, computers and/or statistics are used.

Off-campus work in an approved position using computer and/or statistical techniques in the analysis and solution of real world problems is a valuable option within this major. Students receive salaried appointments and course credits. This experience can be included within the program and completed during the junior or senior year. The duration of the experience is for periods of a summer or a summer plus one semester.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	50 credits
Required in major studies	62 credits
Required in concentration	17-18 credits
Electives	0-1 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—50 credits required

Course	Credit
326-101 Freshman English—Composition or 326-111 Freshman English—Honors I	3
326-102 Freshman English—Reading & Related Writing or 326-112 Freshman English—Honors II	3
391-100 Fundamentals of Speech	2
Select at least 3 credits from:	
326-515 Technical Writing; 326-525 Writing Technical Articles	3
Select at least 2 credits from:	
391-508 Speech Skills for Business and Industry; 391-206 Discussion	2
Select at least 3 credits from:	
304-xxx Art; 326-xxx Literature; 360-xxx Music; 391-xxx Theater	3
Select at least 10 credits from: 308-xxx; 311-xxx; 372-xxx with approval of program director	10
Select at least 9 credits from:	
320-210 Principles of Economics I or with program director's approval 320-201 General Economics; 320-215 Principles of Economics II; 320-420 Labor Economics; 338-xxx History; 375-210 Government; 375-310 Political Parties and Pressure Groups	9
Select at least 3 credits from:	
326-515 Technical Writing; 326-525 Writing Technical Articles	3
Select at least 6 credits from:	
365-201 Introduction to Philosophy; 365-301 Introduction to Logic; 365-375 Personal and Professional Ethics; 387-110 Introductory Sociology; 387-250 Social Psychology; 479-110 General Psychology	6
367-1xx Physical Education	2
Liberal Studies credits from the above courses must total at least 50 credits, elective	1

FOUNDATIONAL MATHEMATICS - 31 credits required

Take both:

355-153 Calculus I	4
355-154 Calculus II	4

or both:

355-156 Calculus and Analytic Geometry I	5
355-157 Calculus and Analytic Geometry II	5

355-158 Calculus III	3
355-255 Differential Equations	3

355-275 Linear Algebra	3
355-370 Modern Algebra I	3

Select at least 6 credits from:	
355-262 Modern Geometry; 355-350 Vector Analysis; 355-371 Modern Algebra II; 355-450 Real Analysis I; 355-451 Real Analysis II; 355-460 Complex Variables with Applications	6

Foundational mathematics credits from the above courses must total 31 credits.

COMPUTATIONAL MATHEMATICS - 31 credits required

354-144 Computer Science I	3
354-145 Computer Science II	3
354-331 Probability and Mathematical Statistics I	3
354-341 Data Structures	3
354-446 Numerical Analysis I	3

354-490	Mathematical Models I	2
354-491	Mathematical Models II	2
354-530	Statistical Methods	3
Select at least 9 additional credits from:		
354-141	Digital Computer Programming	2
354-240	Intermediate Computer Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming—Cobol	3
354-332	Probability and Mathematical Statistics II	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Architecture and Operating Systems I	3
354-442	Computer Architecture and Operating System II	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Note: Certain of the above 9 credits may be required for specific concentrations. See "additional computational mathematics required" under individual concentration requirements.

Concentration Requirements

Applied Research - 18 credits required

354-531	Design of Experiments I	2
354-532	Design of Experiments II	2
354-535	Stochastic Processes I	2

Select at least one block of the following and one course from another block.

Operational Systems

150-650	Introduction to Operations Research	4
354-536	Applied Stochastic Processes II	2

Psychological Techniques

479-190	Psychological Methods I	3
479-390	Experimental Psychology	3
479-690	Psychological Measurement	3

Marketing Systems

160-330	Principles of Marketing	3
169-679	Marketing Research	3
320-470	Economic Model-Building and Forecasting	3

Packaging Systems

170-280	Packaging Fundamentals	2
170-380	Consumer Packaging Systems	3
170-480	Packaging Design and Evaluation	3

Within the 31 credits required in computational mathematics, take 354-332, 354-442 and 3 additional credits from computer methods courses.

Applied Physics - 18 credits required

372-467	Mathematical Physics	3
372-518	Microprocessors and Applications	3
372-531	Statics	3
372-533	Dynamics	3
372-537	Electricity and Magnetism	3

Select at least 3 credits from:

110-270	Circuit Analysis	4
110-280	Networks	4
372-527	Solid State Physics	3
372-529	Atomic and Nuclear Physics	3
372-535	Optics	3

Within the 31 credits required in foundational mathematics, select 3 additional credits from theoretical analysis courses

Architectural Design - 17 credits required

130-110	Drafting	2
130-221	Architectural Design I	3
130-290	Mechanics of Solids I or 372-531 Statics	3
130-325	Architectural Design II	3
130-592	Mechanics of Machinery I or 372-533 Dynamics	3
372-518	Microprocessors and Applications	3

Within the 31 credits required in foundational mathematics, take 355-450, 355-451 and either 355-350 or 355-460.

Within the 31 credits required in computational mathematics, take 354-241, 354-447 and 3 additional credits from computer methods courses.

Business Management - 18 credits required

160-206	Accounting I	3
160-207	Accounting II	3
160-312	Cost Accounting or	
160-335	Accounting for Management Decisions	3
160-330	Principles of Marketing	3
320-550	Managerial Economics	3
Select at least 3 credits from:		
150-600	Organizational Leadership	3
150-740	Decision Theory	3
160-319	Business Law II	3
160-320	Income Tax Accounting	3
160-340	Business Finance	3
160-355	Principles of Risk Management	3
160-679	Market Research	3
320-421	Collective Bargaining and Labor Relations	2
320-435	Money, Banking and Financial Markets	3
320-470	Economics Model-Building and Forecasting	3

Within the 31 credits required in foundational mathematics, take 355-450, 355-451 and either 355-350 or 355-460.

Within the 31 credits required in computational mathematics, select 3 additional credits from computer methods courses.

Electronics - 17 credits required

110-270	Circuit Analysis	4
110-280	Networks	4
110-371	Solid State Electronics	3
110-473	Digital Logic and Switching	3

Select at least 3 credits from:

110-381	Linear Electronic Circuits	3
110-482	Electronic Communication Fundamentals	3
110-542	Computer Applications in Electronics	3
110-574	Microprocessor Fundamentals	3
110-575	Microprocessor Interfacing	3
110-582	Electronic Communication Systems	3
110-583	Fundamentals of Control	4
110-683	Control Systems	3

Within the 31 credits required in foundational mathematics, take 355-450, 355-451 and 355-460.

Within the 31 credits required in computational mathematics, take 354-241, 354-442 and 3 additional credits from computer methods courses.

Food Production Quality Control - 18 credits required

110-551	Introduction to Microprocessors or 372-518 Microprocessors and Applications	3
150-520	Quality Assurance	3
229-650	Food Processing	3
308-506	Food Microbiology	3
311-535	Instrumental Methods of Analysis	3

Select 3 credits from:

150-505	Product and Inventory Control	3
170-280	Packaging Fundamentals	2
170-296	Manufacturing-Materials and Processes I	3
170-380	Consumer Packaging Systems	3
229-212	Nutrition	3
229-240	Food Science	4
229-638	Experimental Foods	3
308-332	and 308-333 Genetics and Lab	3
311-515	Food Chemistry	3

Within the 31 credits required in computational mathematics, take 354-241.

Industrial Management - 17 credits required

150-200	Production/Operations Management	3
150-500	Engineering Economy	2
150-505	Product and Inventory Control	3
150-520	Quality Assurance	3
160-206	Accounting I	3

160-410 Manufacturing Cost Analysis.....
Within the 31 credits required in foundational mathematics, take 355-450, 355-451.

3

Within the 31 credits required in computational mathematics, take 354-447 and 3 additional credits from computer methods courses.

Mechanical Design - 18 credits required

130-110	Drafting	2
130-290	Mechanics of Solids I	3
130-291	Mechanics of Solids II	3
130-532	Mechanical Design	4
130-592	Mechanics of Machinery I	3
130-593	Mechanics of Machinery II	3
Additional computational and foundational mathematics required:		
354-447	Numerical Analysis II	3
Select 3 additional credits from foundational mathematics		3

Mechanical Design - Drafting - 17 credits required

130-110	Drafting	2
130-212	Descriptive Geometry	3
130-290	Mechanics of Solids I or 372-531 Statics	3
130-592	Mechanics of Machinery I or 372-533 Dynamics	3
372-518	Microprocessors and Applications	3
Select at least 3 credits from:		
110-270	Circuit Analysis.....	4
110-280	Networks	4
110-371	Solid State Electronics	3
110-542	Computer Applications in Electronics	3
110-583	Fundamentals of Control	4
130-532	Mechanical Design	4
130-537	Mechanical Design Drafting	2
130-593	Mechanics of Machinery II	3
130-636	Computer Assisted Design	2

Within the 31 credits required in foundational mathematics, take 355-450, 355-451 and either 355-350 or 355-460.

Within the 31 credits required in computational mathematics, take 354-447 and 3 additional credits from computer methods courses.

Numerical Control - 17 credits required

110-551	Introduction to Microprocessors or 372-518 Microprocessors and Applications	3
150-520	Quality Assurance	3
170-296	Manufacturing-Materials and Processes I	3
170-504	Computer Aided Manufacturing	3
170-505	Robotics	2

Select at least 3 credits from:

170-280	Packaging Fundamentals	2
170-380	Consumer Packaging Systems	3
170-510	Manufacturing Systems	3
170-515	Metallurgy	3
170-537	Numerical Control in Manufacturing	1-3
311-541	Chemistry of Materials	3

Within the 31 credits required in foundational mathematics, take 355-450, 355-451 and either 355-350 or 355-460.

Within the 31 credits required in computational mathematics, take 354-241, 354-442 and 3 additional credits from computer methods courses.

INTERNSHIP OPTION

354-475 Applied Mathematics Internship

2-8

ELECTIVES

In fulfilling the necessary competencies for a degree, a student may complete the requirements for a minor in Business Administration, Economics, Physics, Chemistry, Biology, Computer Science or Speech. It is the student's responsibility to obtain approval for the minor from the department offering it.

ART

The Art program includes 80 credits of major studies in Studio Art. Students may choose one of these concentrations in place of major studies in Studio Art: Industrial Design, Interior Design or Graphic Design. The curriculum provides students with experiences in studio work, art history, professional studies and liberal studies. An understanding of liberal studies, art history, the present status of art and design, and an inquisitive attitude toward experimentation in problem-solving will move students to a more professional level in their selected concentration. The 27 experienced art faculty ensure current course content and serve as advisers to the students in respective areas. A required midprogram review offers students a general view of their performance. Extensive library resources and the art department slide library are significant assets. Foreign study opportunities allow students variety in cultural experiences. Opportunities in internships and cooperative education supplement educational theory and practice in a setting with working professionals. A 2.5 grade point average and a "C" or better in art department courses is required to complete this bachelor of science degree. Those who choose major studies in Studio Art must present an exhibition of their work during their senior year. All Design majors must present a portfolio of their work in the final semester.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	132 credits
Required in general studies	45 credits
Required in major studies	80 credits
Electives	7 credits

GENERAL STUDIES—45 credits required

Course	Credit
320-201 General Economics or 320-210 Principles of Economics I	3
326-101 Freshman English—Composition or 326-111 Freshman English—Honors I	3
326-102 Freshman English—Reading and Related Writing or 326-112 Freshman English—Honors II	3
338-xxx Any History	3
355-xxx Any Mathematics (Elective substitution permitted through mathematics department approval)	4
366-xxx Health	1
367-xxx Physical Education	1
391-100 Fundamentals of Speech	2
479-110 General Psychology or 479-632 Perception	3
General Studies Selectives at least	22
Select 7-9 credits from at least two areas:	
326-xxx Literature; 328-xxx Foreign Language (minimum two semesters in same language); 365-xxx Philosophy	7-9
Select 6 credits from Social Sciences choosing from at least two areas:	
303-xxx Anthropology; 375-xxx Political Science; 387-xxx Sociology	6
Select 7-9 credits from Natural Sciences (one must be a laboratory course):	
308-xxx Biology; 311-xxx Chemistry; 372-xxx Physics	7-9

MAJOR STUDIES - 80 credits required

304-100 Drawing I	3
304-101 Fundamentals of Design	3
304-145 The Practice of Art	2
304-500 Drawing II	3
304-501 Life Drawing I	3
304-502 Life Drawing II or repeated (Adv.)	3
304-509 Painting I	3
304-511 Sculpture I	3
304-513 Ceramics I	3
304-515 Art Metal I	3
304-517 Printmaking I	3
304-522 Modern Art	3
304-545 Senior Seminar	1
304-607 Aesthetics (Senior Year)	3
326-250 Classical and Biblical Literature in Translation	3
120-504 Elementary Photography	2
Select 15 additional credits with a minimum of 9 credits from advanced Painting, Ceramics, Sculpture, Art Metal or Printmaking	15
Select 12 additional credits of Art History	12
Select 7 elective credits	7

CONCENTRATIONS

May be completed by substituting for "major studies" as follows:

Graphic Design - 80 credits required

130-140 Graphic Arts	2
130-251 Composition	3
170-280 Packaging Fundamentals	2
304-100 Drawing I	3
304-101 Fundamentals of Design	3
304-210 Letter Form Design	3
304-300 Design Theory and Methods	3
304-305 Presentation Techniques	3
304-310 Graphic Design I	3
304-319 Evolution of Design	3

304-360	Graphic Design II	3
304-380	Signage and Exhibition Design	3
304-500	Drawing II	1-3
304-501	Life Drawing I	3
304-503	Design	3
304-517	Printmaking I	3
304-522	Modern Art	3
120-504	Elementary Photography	2
Select 304-410	Product and Packaging Graphics and 304-480 Senior Project-Graphic Design or other graphic design courses approved by adviser	7
Select at least 6 credits from:		
130-110	Drafting; 130-355 Line and Halftone Photography; 130-366 Image Transfer; 160-330 Principles of Marketing; 160-370 Principles of Advertising; 479-579 Public Relations; 120-605 Advanced Photography; 120-630 Audio/Film/TV Production Fundamentals; 120-645 Color Photography; other approved by adviser	6
Select at least 12 credits from:		
304-xxx	Sculpture; 304-xxx Ceramics; 304-xxx Art Metal; 304-xxx Painting; 304-500 Drawing; 304-502 Life Drawing II; 304-518 Printmaking or other approved by adviser	12
Take either:		
354-140	Computer concepts or 354-141 Digital Computer Programming	2
Select 9 additional electives		9
Industrial Design - 80 credits required		
130-110	Drafting	2
130-311	Technical Drafting	3
170-102	Manufacturing-Materials and Processes I	3
170-103	Manufacturing-Materials and Processes II	3
304-100	Drawing I	3
304-101	Fundamentals of Design	3
304-300	Design Theory and Methods	3
304-305	Presentation Techniques	3
304-310	Graphic Design I	3
304-319	Evaluation of Design	3
304-330	Industrial Design I	3
304-335	Product Form Design	3
304-340	Industrial Design II	3
304-360	Graphic Design II	3
304-430	Industrial Design III	4
304-432	Industrial Design Portfolio	1
304-440	Industrial Design IV	4
304-500	Drawing II	3
304-503	Design	3
304-511	Sculpture I	3
304-522	Modern Art	3
Select at least 6 credits from:		
100-500	Introduction to Futures Study; 130-140 Graphic Arts; 130-221 Architectural Design I; 130-636 Computer Assisted Design Problems; 170-280 Packaging Fundamentals; 600-504 Elementary Photography or other courses approved by adviser	6
Select at least 12 credits from:		
304-315	Environmental Interior Design; 304-320 Interior Furniture Design; 304-380 Signage and Exhibit Design I; 304-405 Advanced Presentation Techniques for Designers; 304-410 Product and Packaging Graphics; 304-500 Drawing II; 304-501 Life Drawing I; 304-509, 510 Painting I and II; 304-512 Sculpture II; 304-513, 514 Ceramics I and II; 304-515, 516 Art Metal I and II; 304-517, 518 Printmaking I and II	12
Select 5 additional elective credits		5
Interior Design - 82 credits required		
130-120	Construction Drafting	2
130-221	Architectural Design I	3
170-270	Light Building Construction	2
214-140	Textiles	3
304-100	Drawing I	3
304-101	Fundamentals of Design	3
304-204	Interior Design	3
304-205	Problems in Interior Design	2
304-305	Presentation Techniques	3
304-314	Interior Design Procedures and Specifications	2

304-315	Environmental Interior Design I	3
304-316	Environmental Interior Design II	2
304-319	Evolution of Design	3
304-320	Interior Furniture Design	3
304-431	Symposium in Interior Design	2
304-451	Interior Design Practicum	3
304-500	Drawing II	3
304-503	Design	3
304-522	Modern Art	3
304-532	Economics of Home Furnishing	3
304-533	Period Furnishings	3
Select at least 4 courses (8 credits) from:		
130-180	Hospitality/Living/Institutional Facility Planning; 130-212 Descriptive Geometry; 130-325 Architectural Design II; 150-304 Principles of Business Management; 245-250 Family Housing; 245-436 Commercial and Residential Lighting; 245-455 Kitchen Planning; 354-140 Computer Concepts or 354-141 Digital Computer Programming; 600-504 Elementary Photography; or other courses approved by adviser	8
Select either:		
304-511	Sculpture or 304-513 Ceramics	3
Select at least 12 credits from:		
304-500	Drawing II; 304-501 Life Drawing I; 304-509, 510 Painting I and II; 304-511, 512 Sculpture I and II; 304-513, 514 Ceramics I and II; 304-515, 516 Art Metal I and II; 304-517, 518 Printmaking I and II; or other courses approved by adviser	12
Select 5 additional elective credits		5

ART EDUCATION

The Art Education program provides students with experience in liberal studies, art history, studio art and professional education. This bachelor of science program prepares students for certification by the Department of Public Instruction for teaching art in elementary and secondary schools. An understanding of liberal studies, art history, the present status of art and the educational environment, with an inquisitive approach toward problem solving will move students to a more professional level. The 25 experienced art faculty ensure current course content and serve as advisers for students. Preteaching observation, presented at the sophomore level, offers students an early involvement in elementary and secondary schools. A required midprogram review offers students a general understanding of their performance. Extensive library resources and the art department slide library are a significant asset. Foreign study opportunities allow students variety in cultural experiences. Methods courses and student teaching are taken concurrently to provide students with a full semester of teaching in elementary and secondary settings. An optional 11 credit additional concentration in Special Education is available. A minimum grade point average of 2.75 on a 4.0 scale is required in major, minor, concentration and professional education courses. A 2.5 grade point average and a "C" or better in art department courses are required for admission to student teaching and graduation. Art Education majors must present an exhibition of their work during the senior year.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	134 credits
Required in liberal studies	42 credits
Required in major studies	56 credits
Required in professional studies	33 credits
Electives	3 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—42 credits required

Course	Credit
326-101 Freshman English: Composition or 326-111, Freshman English: Honors I	3
326-102 Freshman English: Reading and Related Writing or 326-112, Freshman English: Honors II	3
326-250 Classical and Biblical Literature in Translation	3
391-100 Fundamentals of Speech	2
355-xxx Math	4
479-110 General Psychology	3
366-xxx Health	1
367-xxx Physical Education	1

Select 6-9 credits from Humanities choosing from at least two areas: 326-xxx Literature, Foreign Language (minimum of four credits in one language), 365-xxx Philosophy or 338-xxx History.

Select 6-9 credits from Social Sciences choosing from at least two areas: 320-xxx Economics, 375-xxx Political Science, 387-xxx Sociology, 303-xxx Anthropology.

Select 7-9 credits from at least two areas of Natural Sciences including at least one lab course: 308-xxx Biology, 311-xxx Chemistry or 372-xxx Physics.

MAJOR STUDIES—56 credits required

304-100 Drawing I	3
304-101 Fundamentals of Design	3
304-145 The Practice of Art	2
304-500 Drawing II	3
304-501 Life Drawing I	3
304-509 Painting I	3
304-511 Sculpture I	3
304-513 Ceramics I	3
304-515 Art Metal I	3
304-517 Printmaking I	3
304-545 Senior Seminar	1
304-607 Esthetics	3

Art Oriented Studio Electives (from one studio area)

Select 304-202, Introduction to Art; 304-522, History of Modern Art; and 2 additional 3-credit art history selectives.

ADDITIONAL REQUIREMENTS—2 credits required

120-504 Elementary Photography	2
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PROFESSIONAL STUDIES—28 credits required

305-208 Preteaching Observation Seminar (Sophomore Year)	3
305-311 Curriculum Development for Art	2
421-303 Educational Psychology	2
421-326 Foundations of Education	2
421-422 Principles of Secondary Education	2
421-536 Working with the Culturally Different	2
421-576 Field Experience—Cross Cultural Experience	1
431-630 Mainstreaming Special Students	3
421-682 Reading Methods—Secondary School	2
The following courses are taken in the same semester.	
305-402 Introduction to Teaching Art in Elementary Schools	3
305-403 Introduction to Teaching Art in Secondary Schools	3
305-408 Student Teaching in the Elementary School-Art	5
305-409 Student Teaching in the Secondary School-Art	5
Elective	3

SCHOOL OF EDUCATION AND HUMAN SERVICES

Dr. Paul R. Hoffman, Acting Dean

PSYCHOLOGY

Psychology, as a program, is the systematic study of behavior, particularly the behavior of individuals—their actions, reactions and cognitions. It has as its overriding goal the preparation of students to contribute to the improved condition of man. Students acquire competencies that lead to employment wherever psychology is applied in educational institutions, public and private agencies, business and industry. Students entering the program should realize that they must obtain graduate level education or other advanced training before they will be accepted as professional psychologists.

The Psychology Program is flexible. Students are given the opportunity to develop a personal program plan centered around their individual needs and goals. With careful planning, students may include self-planned concentrations in their programs in such diverse areas as counseling foundations, biofeedback technology, human services, family issues, industrial psychology and many others. All students are expected to include a core of study in the fundamental principles of human behavior in their programs and each is expected to develop literacy in the arts, humanities, natural sciences, and social sciences. Each student is also expected to develop and demonstrate effective communication skills as a part of the program's requirements.

After entering the Psychology Program, all students prepare and submit a tentative plan for the remainder of their undergraduate program as a part of their activities in Psychology Seminar I. This tentative plan is based on their particular personal, vocational and professional interests and goals and is developed with the guidance of the Psychology program director and Psychology faculty.

GENERAL REQUIREMENTS—B.A. DEGREE:

Total for graduation	130 credits
Required in liberal studies	70 credits
Required in major studies	40 credits
Electives	20 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—70 credits required

Communications (at least 25 credits) Suggested courses include fundamental English courses and advanced writing courses; fundamental and advanced speech courses; foreign languages; basic statistics; computer programming; journalism; graphic arts; audio-visual communications; reading courses; and others. Students are strongly advised to develop a variety of communication skills involving many different modes of communication.

Fine Arts, Physical Education, and Humanities (at least 15 credits) Suggested courses include art and music appreciation courses; literature courses; philosophy courses; and physical education courses which contribute to good personal health and the development of recreation skills. Students are strongly advised to plan at least one literature course and one philosophy course in this area of their program plan.

Mathematics, Natural and Physical Sciences (at least 15 credits) Students are strongly advised to include at least one college level math course and one laboratory science course. Courses in genetics, physiology, anatomy, sexual biology, animal behavior, and organic chemistry are particularly appropriate for Psychology students. Applied Mathematics courses (e.g. Computer Programming, Statistics, etc.) cannot be used for electives in this category, but with planning, may be used as communications credit.

Social Sciences (at least 15 credits) Students are strongly advised to include at least one sociology course and a balance of courses in history, economics, political science, and anthropology in their program plan.

MAJOR STUDIES—40 credits required

All students enroll in a continuing seminar as a part of their program. As they progress through these seminars, they develop new competencies and demonstrate their achievements. While in Psychology Seminar I, students plan their four-year programs and take a core of required courses: 479-110, 479-120, 479-150, and 479-190. After submitting their program plan and completing the required courses, they progress to Psychology Seminar II.

Course	Credit
<i>Required Courses:</i>	
479-100 Psychology Seminar I—Foundations	1
479-110 General Psychology	3
479-120 Psychology: Its History and Systems	3
479-150 Humanistic Psychology	3
479-190 Psychology Methods I	3
479-300 Psychology Seminar II	1
479-400 Psychology Seminar III	1
479-x98 Psychology Field Experience	2
479-x99 Independent Study	(at least) 1
<i>Advanced, Elective Courses:</i>	
479-251 Child Psychology	3
479-281 Environmental Psychology	3
479-390 Experimental Psychology*	3
479-460 Personality and Mental Health	3
479-484 Introduction to Behavior Modification	2
479-530 Psychology of Learning*	3
470-535 Motivation and Emotion*	3
479-540 Psychology of Individual and Group Differences	3
479-552 Adolescent Psychology	3
479-561 Abnormal Psychology	3

479-570	Assertive Training Procedures	2
413-571	The Psychology of Marriage and the Family	2
479-574	Psychology of Women	2
479-581	Industrial Psychology	2
479-632	Perception*	3
479-690	Psychological Measurement*	3
326-541	Psycholinguistics	3
387-250	Social Psychology	3
413-501	Introduction to Guidance	2
	One other 413 course	2
421-303	Educational Psychology	2
	One other 421 course	2-3
459-101	Introduction to Rehabilitation	3
	One other 459 course	2-3
	Behaviorally related courses in Life Sciences (e.g. Animal Behavior, Neuroanatomy, Psychobiology)	2-3
	Others as appropriate to individual program plans.	

*Courses conducted primarily for Psychology majors and minors. All Psychology students are strongly advised to include a selection of these courses in their program.

ELECTIVES—20 credits required

As much as possible, the courses in this area of the program are free electives. The particular courses students take for this area depend on their choice of a minor, self-planned concentrations and personal goals. Many courses in the School of Home Economics and the School of Industry and Technology may help students in Psychology to develop important competencies. These are suggested to students in separate communications.

MINOR STUDIES—22 credits required

Students in the Psychology Program are required to complete a minor program. They may elect to complete one of the minor programs offered in various departments at Stout, or with the program director's advice and approval, they may substitute a preplanned program of work developed around a particular concept or process. The minor program overlaps other areas of the program and is not a separate selection of courses beyond the three areas described above.

NON-TRADITIONAL LEARNING EXPERIENCES

In recognition of the value that may be derived from learning experiences that take place outside of the traditional classroom, the psychology program requires all students to complete at least one field experience. This involves a working/learning activity and is often completed during a summer break. In addition, the program requires or encourages students to participate in additional varieties of learning activities including independent study, internships, foreign study, exchange programs and others.

SENIOR RESEARCH INVESTIGATION

As a culminating experience in the program, in conjunction with Psychology Seminar III, students conduct and report an original research investigation pertinent to Psychology and to their particular interests. This project provides the opportunity for students to practice skills they have acquired and to apply the knowledge they have attained in their studies.

VOCATIONAL REHABILITATION

The main objective of this program is to provide the field of rehabilitation with baccalaureate level personnel who have the competencies necessary to help persons with disabilities optimize their vocational potential. A general listing of these competencies includes:

- A. Knowledge of the history, philosophy and development of the rehabilitation movement; knowledge of the rehabilitation process as it exists in various settings, including sheltered workshops, rehabilitation facilities, private rehabilitation, vocational rehabilitation agencies; knowledge of mental, physical, and social disabilities plus the vocational limitations of these disabilities; knowledge of, and ability to utilize community resources to assist the handicapped; knowledge of, and ability to relate to allied professions: medicine, psychology, social work, physical therapy; and knowledge of, and ability to utilize occupational information and career planning methods.
- B. Elementary skill in the use of vocational evaluation techniques; elementary skill in work adjustment and counseling techniques; and elementary skill in utilizing job placement and follow-up procedures for the handicapped.
- C. Ability to interact effectively with persons with disabilities. This could include persons with physical, emotional and social disabilities such as: mental illness, mental retardation, blindness, deafness, alcoholism, epilepsy, and those who have committed criminal offenses. The graduates of this program are employed in sheltered workshops, rehabilitation facilities, state vocational rehabilitation agencies, private rehabilitation, correctional centers, business and industry, adult day care centers, mental health clinics, halfway houses, and a variety of other settings serving the handicapped. Opportunities for advancement to supervisory and administrative positions are excellent. Graduate study in rehabilitation is available in more than 80 colleges and universities.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	130 credits
Required in liberal studies	44-48 credits
Required in major studies	53 credits
Electives	7-11 credits

PROGRAM REQUIREMENTS

Liberal Studies - 44-48 credits required

Course	Credit
308-132 Physiology and Anatomy*	4
308-220 Physiology of Disabilities*	3
320-xxx Economics or 375-xxx Political Science	3
326-101 Freshman English: Composition*	3
326-102 Freshman English: Reading and Related Writing*	3
338-xxx History	2-3
Literature or Foreign Language	3-4
355-1xx or higher Mathematics	4
365-xxx Philosophy	3
Art, Music, Theater, or Photography	2-3
Any 366-xxx or 367-xxx course	2
387-110 Introductory Sociology	3
391-100 Fundamentals of Speech*	2
391-2xx Advanced Speech* or 326-xxx Advanced Writing*	2-3
421-205 Human Relations for the Helping Professions or, for Special Education Concentration 479-552 Adolescent Psychology	2-3
479-110 General Psychology	3

*A grade of "C" or better is required in these courses before graduation.

Major Studies - 55 credits required

413-675 Counseling Theory	2
459-101 Introduction to Rehabilitation	3
459-102 Community Resources	3
459-205 Rehabilitation Practicum	4
459-230 Psycho-Social Aspects of Disabilities	3
459-310 Vocational Evaluation	4
459-401 Principles and Techniques of Case Load Management	2
459-410 Placement Processes with the Handicapped	3
459-585 Rehabilitation of the Mentally Retarded	2
459-605 Microcomputer Applications for the Handicapped	2
459-610 Psychological Testing with Handicapped People	2
459-670 Work Adjustment Services	3
459-680 Principles of Rehabilitation Counseling	3
459-x98 Vocational Rehabilitation Field Experience	2
479-561 Abnormal Psychology	3
Select 12 credits from the following restricted electives. Check with program director for selection consistent with concentration.	
140-580 Driver Education for the Handicapped	2-3
421-305 Teaching Practicum	2
431-516 Psychology of the Exceptional Child	3
431-524 Career and Vocational Education for the Retarded	3
431-581 Legal Rights of Handicapped	2
459-325 Rehabilitation of the Sensory Disabled	3
459-402 Rehabilitation Facilities Operation	3
459-413 Vocational Evaluation Seminar	2
459-505 Sign Language I	3
459-506 Sign Language II	3
459-509 Introduction to Biofeedback	3
459-510 Clinical Biofeedback Laboratory	3
459-520 Rehabilitation of the Chemically Dependent	3
459-525 Rehabilitation of the Public Offender	3
459-550 Independent Living	2
459-560 Technological Applications: Rehabilitation	2
459-565 Laboratory in Rehabilitation Technology	2
459-601 Rehabilitation in the Private Sector	2

459-605	Microcomputer Application for the Handicapped	2
459-661	Forensics for the Rehabilitation Professional	2
459-682	Sexuality and the Disabled	2
459-685	Group Processes in Rehabilitation Settings	2
459-688	Advanced Job Placement	2
459-x98	Vocational Rehabilitation Field Experience	2
459-x99	Independent Study	1-3

Or others approved by the Program Director

1. Students majoring in rehabilitation must obtain a "C" or better in all courses taught in the rehabilitation department. The student will have the option of taking the course over again and obtaining a "C" or better or dropping from the program. In addition, an overall grade point of 2.5 is required for all courses taught by the rehabilitation department.
2. Students must fulfill the English adequacy and speech proficiency requirements of the respective departments.
3. Students must select a special studies concentration from any of the following career areas. Courses in these areas are designed to provide specific technical skills for working with persons with disabilities and disadvantaged individuals in rehabilitation settings.

Concentrations - 22 credits are required. Students select a concentration and have the form signed by the student and the faculty adviser by their junior year. Three of the concentrations, Rehabilitation Technology Specialist, LEA Vocational Evaluator, and Special Education Certification, require either more than 22 credits and/or involve additional changes in the overall curriculum requirements. The credits necessary for graduation remain at 130 except for Special Education which is 134.

Business - Introduces students to basic principles and practices of business administration.

160-206	Accounting I	3
160-207	Accounting II	3
	Business restricted electives	16

Home Economics - Broad exposure to family, clothing, food and habitational issues.

Human Development - Family Living	restrictive electives	8
Habitational Resources	restrictive electives	4

Food and Nutrition	restrictive electives	5
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Apparel, Textiles and Design	restrictive electives	5
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Independent Living - Indepth experiences dealing with the critical issues confronting individuals with disabilities to help them live more independently.

413-405	Peer Counseling	3
459-550	Independent Living	2
459-682	Sexuality and the Disabled	2
459-x98	Vocational Rehabilitation Field Experience	2
479-570	Assertive Training Procedures	2

Independent Living Restrictive Electives

Industrial - Provides introduction to industrial activities related to production work in rehabilitation facilities.

150-200	Production/Operations Management	3
170-101	Processes: Concepts	3
	Industrial Arts and Production Management	16

Physical Education - Combination of recreation and sports-related courses for students interested in recreation for individuals with disabilities.

366-340	ARC Standard First Aid and Personal Safety	2
367-340	Camp Leadership or 367-325 Recreation Leadership	2
366-355	Kinesiology	3
366-346	ARC Cardiopulmonary Resuscitation	5

Physical Education restrictive electives

11.5

Rehabilitation Counseling - Counseling provides student with entry level job skills for counseling positions in the rehabilitation field.

413-405	Peer Counseling	3
459-509	Introduction to Biofeedback	3
459-5xx	Counseling Practicum	4
459-685	Group Processes in Rehabilitation Settings	2

Rehabilitation Counseling restrictive electives

10

Rehabilitation Technology - Prepares specialists to work with rehabilitation engineers and other rehabilitation staff in applying new and existing technology to assist persons with disabilities in vocational and independent living situations.

110-204	Electricity/Electronics Fundamentals	3
130-110	Drafting	2

140-587	Human Factors Engineering	3
170-102	Manufacturing Materials and Processes I	3
170-103	Manufacturing Materials and Processes II	3
170-205	Design for Industry	3
459-560	Technological Applications: Rehabilitation	2
459-565	Laboratory in Rehabilitation Technology	2

Rehabilitation Technology restrictive electives 11

Vocational Evaluator, Local Education Agency - Certifies students to work as Vocational Evaluators in public schools.

421-682	Reading Methods - Secondary Schools	2
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431-630	Mainstreaming Special Students	3
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459-413	Vocational Evaluation Seminar	2
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Curriculum and Methods restrictive electives 4-6

Foundations of Education restrictive electives 4-6

Career Education and Educational/Vocational Programming restrictive electives 4-8

Individualized Career - Designed for students whose educational goals cannot be met by previous concentrations. Students who select this option must develop, with advice and consent of their faculty adviser, a list of 22 credits that they plan to take. Written rationale explaining their career goals along with the courses selected must be signed by the student and their faculty adviser and be in the student's file by their junior year. This option is frequently used by transfer students.

Free Electives - 7-11 credits from courses offered at Stout or those approved for transfer.

SPECIAL EDUCATION TEACHER CERTIFICATION

Special Education Teacher Certification (Secondary MR) may be obtained along with a Bachelor of Science degree in Vocational Rehabilitation by completing the required credits in Liberal Studies and the following courses. Students considering this unique program must see the Special Education Program Director for arrangements. A grade of "C" or better and a grade point average of 2.5 or higher is required in all Special Education and Rehabilitation courses. A minimum total of 134 credits is required.

Vocational Rehabilitation - 25 credits

459-101	Introduction to Rehabilitation	3
459-102	Community Resources	3
459-230	Psycho-Social Aspects of Disabilities	3
459-310	Vocational Evaluation	4
459-401	Principles and Techniques of Case Load Management	2
459-410	Placement Processes with the Handicapped	3
459-605	Microcomputer Application for the Handicapped	2
459-610	Psychological Testing with Handicapped People	2
459-680	Principles of Rehabilitation Counseling	3

Education - 18 credits

199-502	Principles of Vocational/Technical/Adult Education	2
421-3xx	Education Practicum	1
421-303	Educational Psychology	2
421-326	Foundations of Education	2
421-408	Introduction to Teaching Strategies	4
421-536	Working with the Culturally Different	2
421-576	Field Experience - Cross Cultural Experience	1
421-582	Secondary Reading and Language Development	2
120-560	Audiovisual Communications	2

Special Education - 36 credits

431-481	Student Teaching with Disabled Youth	6
431-516	Psychology of the Exceptional Child	3
431-518	Clinical Experience with the Handicapped	2
431-522	Teaching Basic Skills to the Mentally Retarded	3
431-524	Career and Vocational Education for the Retarded	3
431-526	Practicum in Special Education	2
431-528	Assessment for Individual Educational Planning	2
431-585	Introduction to Mental Retardation	2
431-662	Classroom Management Techniques	3

Professional Selective(s) - 4-6 credits

130-140	Graphic Arts	2
140-580	Driver Education for the Handicapped	2
170-101	Processes—concepts	3
199-560	Cooperative Occupational Education programs	2

212-250	Individual and Family Relations	3
214-590	Practicum in Textile Design	3
413-501	Introduction to Guidance	2
431-501	Learning Disabilities	3
431-581	Legal Rights of Handicapped	2
459-xxx	.....	1-6
479-561	Abnormal Psychology	3

SPECIAL FIELDS CERTIFICATION

Special Fields Certification is an "add-on" teaching certificate to allow teachers in special fields, i.e., Industrial Education, Home Economics, Marketing Education, Physical Education and Art Education to teach special needs students in their particular field. The following planned sequence of courses will allow students completing teacher certification in special fields and/or teachers already certified in special fields to receive Special Education certification within their special field. This 11-semester credit sequence is recognized as an approved program by the Wisconsin Department of Public Instruction.

431-516	Psychology of the Exceptional Child or	
431-630	Mainstreaming Special Students	3
431-518	Clinical Experience with the Handicapped*	2
431-528	Assessment for Individual Educational Planning	2
431-662	Classroom Management Techniques	3

*This course may be waived for students exposed to supervised clinical experience with handicapped youth in student teaching.

SPECIALIZATIONS

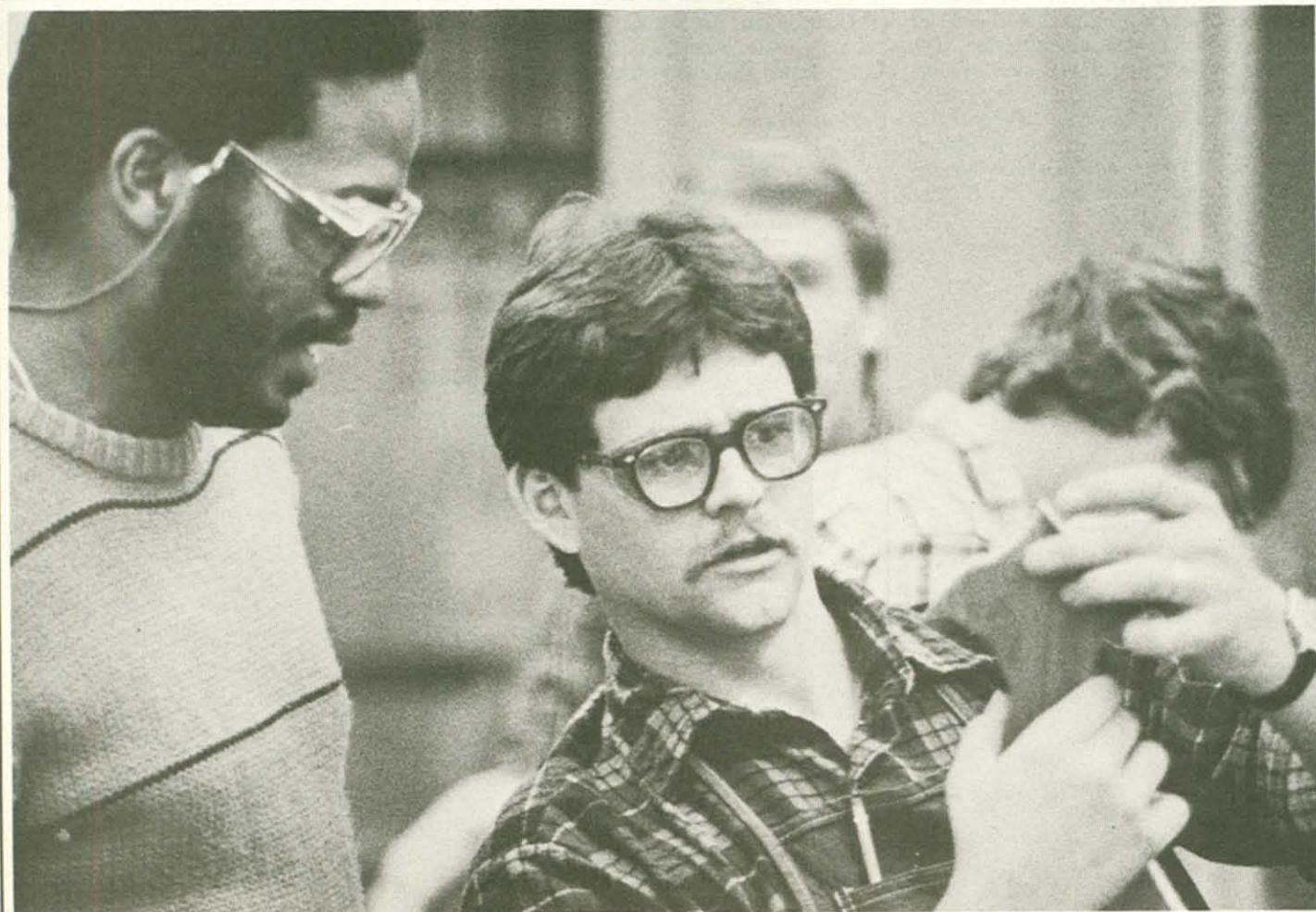
An all-university specialization is designed to achieve defined outcomes. Designing an all-university specialization begins by identifying a significant area of study, by setting forth the outcomes intended, and by identifying the learning experiences to be offered to students, and the evaluation procedures to be used. Curricular design for all-university specializations is not constrained to traditional academic patterns. Primary consideration is given to clarity in defining intended outcomes, effectiveness in promoting learning and appropriateness to the targeted student population. Learning experiences for all-university specializations often include non-credit experiences, internships, mentor-fellow interactions, evaluations of specified capabilities achieved outside of the university setting, or successful completion of proficiency evaluations or external certification or licensing examinations. Of course, most all-university specializations include traditional university course work as well. These courses are often from several departments or curricular areas and involve faculty from several disciplines.

All-university specializations do not depend on the backgrounds of students in any **single major**. They are intended to accomplish their objective within the learning experiences listed for the specialization. However, if a student takes courses as part of the all-university specialization, those courses may also be applied to a variety of existing graduate or undergraduate degree programs, as far as the curricula of these programs permits. Completion of an all-university specialization is recorded on the student's transcript and a certificate of completion is issued as well.

All-university specializations are not defined primarily in terms of numbers of credits accrued. Instead, the program specifies the completion of prescribed learning experiences and/or achievement of specified capabilities. The student's time commitment is consistent with achieving the desired outcomes. All-university specializations are highly focused; that is, they do not address secondary or concomitant outcomes. They do not include electives and there is limited opportunity (if any) for students

to select among comparable courses. They are designed to focus on specific, designated purposes, rather than being intended for individualization for each student. All-university specializations are specified programs to achieve desired outcomes, with designated evaluation procedures.

All students enrolled at Stout have the option of completing an all-university specialization in addition to the degree program. Courses taken for the specialization may also be applied to the degree program, where they fit within the requirements of the program. In some cases, electing both a degree program and an all-university specialization may not increase the length of time spent at the University beyond the usual commitment for the degree alone; in other cases, additional time may be required.



CRAFTSMANSHIP

This all-university specialization is intended for persons with interest in any of several craft areas, who wish to achieve professional levels of skill and knowledge in that craft. For each student in the all-university specialization, a team of faculty members with expertise in the area (which may also include practicing professional craftspersons) will be appointed. This team will plan a series of learning experiences for the student and will meet periodically during the program to assess the student's progress toward the program objectives.

The principle instructional method for this all-university specialization is individually guided learning experiences, conducted in the University laboratories under supervision of a faculty committee and/or under the immediate supervision of a practicing craftsperson. Existing course work will also be utilized as a source of learning experiences, where appropriate. Stout offers extensive course work related to several craft areas. Internships in operational crafts businesses may also be arranged for some students. The principle evaluation process for this specialization is periodic review, including formative and summative evaluation by the team of faculty members, which will be appointed for each student in the specialization. The faculty advisory team will also conduct the summative evaluation which determines whether the student has successfully completed the program. Contact the Office of the Dean, School of Industry and Technology for further information.

Requirements for the Specialization

INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1 Refine skills in chosen craft area.	Participation in craftwork under the direction of a faculty member and/or professional crafts people.	Evaluation and critique by faculty adviser and/or professional crafts people.
2 Develop a sense of aesthetics.	Interaction with faculty, visiting artists and professional crafts people.	Evidence of a sense of aesthetics and attitudes of excellence will be displayed in individual work, evaluated by a team of advisers.
3 Develop a critical understanding of one's abilities.	A study of and extensive work in a specific craft area.	Successful completion and evaluation of quality craft items via critiques with professionals. Progress will be evaluated periodically by a team of advisers.
4 Develop the ability to successfully confront new design and technical challenges.	Problems which require new and unique solutions will be assigned, worked on and completed by the learner.	Degree to which problem criteria have been fulfilled in the proposed solution will be evaluated by the team of advisers.
5 Develop knowledge of appropriate facilities, tools, resources and materials.	Work with appropriate facilities, tools, resources and materials. (See below for a sample listing of existing related course work at Stout.)	Evidence of using appropriate facility, tools, resources and materials, to be evaluated by supervisor(s) of laboratory experience.
6 Develop a knowledge of procurement of tools, materials and equipment.	Select and procure proper tools, materials and equipment. With help of faculty adviser, work toward meeting standards of quality.	Success in obtaining proper tools, materials and equipment. Evidence of working to set standards of quality. Progress evaluated periodically by faculty adviser. Summative evaluation by team of advisers.
7 Develop individual standards of quality craftsmanship.	Work toward meeting standards of quality.	Evidence of working to set standards of quality. Progress toward, and achievement of professional standards of craftsmanship, will be confirmed by team of advisers.
8 Develop ability to assess viability of craft career.	Discussions and critiques with faculty and professional crafts people.	Self-assessment of craftwork and career potential. Validity of self-assessment confirmed by team of advisers.
9 Develop ability to use references related to individuals chosen craft.	Utilize references on a continuous basis and conduct library research on a major project.	Produce a research paper and/or project. Quality of paper and/or project will be evaluated by the team of advisers.
10 Develop an understanding of appropriate small business practices.	Study appropriate tax, resource, production and accounting systems. Complete the course 160-230 Small Business Management (3 credit) or an internship in an operating crafts business (minimum of 3 credits).	Successful completion of designated course work and/or internship experiences.

Courses in Crafts-Related Areas

Courses may be selected from the following list or from other current offerings, as appropriate, according to the objectives and existing level of expertise and ability of individual students in the craftsmanship specialization.

170-202 Metals (2 credits)	170-344 Cabinet Work (2 credits)	214-591 Natural Dyeing and Hand Spinning (2 credits)
170-209 General Finishing (2 credits)	170-346 General Woodworking (2 credits)	214-690 Advanced Fiber Design (1-3 credits)
170-222 Industrial Ceramics (3 credits)	170-357 Metal Casting Processes	214-693 Structural Design and Weaving (2 credits)
170-230 Metal Machining Technology (3 credits)	170-365 Production Welding Technology (3 credits)	214-694 Advanced Weaving Studio (2 credits)
170-241 Machine Woodworking (2 credits)	170-515 Metallurgy (3 credits)	304-513 Ceramics I (3 credits)
170-304 Industrial Crafts (2 credits)	170-565 Welding II (2 credits)	304-514 Ceramics II (1-3 credits)
170-357 Metal Casting Processes (3 credits)	214-140 Textiles (3 credits)	304-515 Art Metal I (3 credits)
170-313 Wood Technology (3 credits)	214-545 Textiles for Interiors (2 credits)	304-516 Art Metal II (1-3 credits)
170-331 Machine Shop II (2 credits)	214-550 Textile Evaluation (3 credits)	304-520 Clay and Glaze Laboratory (1 credit)
170-333 Machine Shop III (2 credits)	214-590 Practicum in Textile Design (3 credits)	

FUTURES STUDIES

Increasingly, our society needs people who have the skills and talents to make projections, and to use the concepts and techniques of futures studies. As change increasingly affects our lives, people who have the skill to manage the dynamics of change will be in demand, both personally and professionally, in education, government, the military, business, industry, the church and volunteer organizations.

The curriculum for this all-university specialization includes three group instruction courses (5 credits) and four individually guided learning experiences (6 credits). The individually guided experiences include two independent studies, an on-campus internship and a field study to be conducted in an off-campus setting. Completion of the all-university specialization requires a total of 11 credits. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

	INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1	Understanding of the concepts, materials and organizations related to Futures Studies.	100-500 (2 credits) Introduction to Futures Study. This course will introduce the student to the information and skills necessary to start and continue Futures Studies activities.	Examination, papers and reports, all meeting a minimum grade of "C."
2	Ability to employ common futures forecasting techniques within the context of a futures research project.	100-525 (1 credit) Advanced Futures Study. This independent study course will focus on projection techniques. The student will experiment with several of the common techniques.	Examination, papers and reports, all meeting a minimum grade of "C."
3	Ability to apply the concepts and techniques of Futures Studies to the institution of the family.	212-580 (1 credit) Future of the Family. Evaluation of experimental and utopian forms of the family and study of the future of the family.	Examination, papers and reports, all meeting a minimum grade of "C."
4	Ability to employ futures studies resources to do futures research.	195-532 (2 credits) Futures of Technology. This course will focus on the three time frames of technology, starting with definitions and exploration of others' ideas about future possibilities.	Positive recommendation from the adviser and an annotated bibliography derived from the literature search.
5	Ability to apply the concepts and techniques of futures research to academic purposes.	100-xxx (1 credit) Independent Study Literature Search. This experience will involve the student more heavily in a particular area of interest and provide an opportunity for some original futures research.	Positive recommendation from Center for Futures Studies director, based on the quality of reports and an assessment of reactions from clients.
6	Ability to conduct futures research within corporate or organizational setting.	100-xxx (2 credits) Internship in Center for Futures Studies. This on-campus experience will provide an opportunity for students to practice the skills learned, to broaden their experiences and to provide a service to the Stout community.	Positive reaction from agency with which student has served during the field study (a checklist of criteria will be provided).

INTERNATIONAL STUDIES

As the world moves toward the 21st Century, people in all countries and cultures are increasingly interacting with each other. Many Stout graduates find work in multinational businesses and international tourism. Others go into the Peace Corps or other types of international volunteer work. Many more use their leisure time for travel or study abroad. Even those who never venture abroad find their professional, civic and personal lives impacted by the expansion of international relationships.

The International Studies Specialization at Stout is flexibly designed to offer both adult learners and traditional students an opportunity to better understand other cultures and international relationships and to compete more successfully in the workplace. The specialization requires all students to complete six core courses or their equivalents at Stout or at other educational institutions in the United States or abroad. This core provides an introduction to:

- 1) the structure and problems of international relations,
- 2) cultural variation and analysis,
- 3) the geographical setting of international relations,
- 4) the study of a second language,
- 5) the culture and history of a country or region other than one's own, and
- 6) interaction with peoples of another culture.

After completing the core, students select from several options the one that best meets their interests and needs. The International Business option is designed to increase knowledge and understanding of international business and economic relations. The International Tourism option is for students preparing for careers in the tourism industry. The Language Studies option and Area Studies option can be useful for persons who want to prepare to interact and communicate in an increasingly interdependent world. The Comparative Education option will introduce students preparing for careers in education or international service to knowledge about education systems and teaching methods in other countries and will be useful for teachers considering exchange programs or other teaching opportunities abroad. The Clothing, Textiles and Fashion option is designed for persons interested in understanding the international aspects of this industry.

Students may fulfill these learning objectives through a combination of formal coursework, study or work experience abroad or faculty-directed independent study. All students in the specialization are strongly encouraged to plan work or study experience abroad.

Requirements for the Specialization

	CORE LEARNING OBJECTIVES	LEARNING ACTIVITY	EVALUATION OF LEARNING
1.0	Develop understanding of international relations.	(must complete 15-18 credits as required below) 375-340 International Relations (3 credits) or equivalent coursework abroad.	Exams, papers and reports averaging a grade of "C."
1.1	Develop understanding of concepts used to analyze international relations.		
1.2	Recognize participants and patterns of international relationships.		
1.3	Identify and analyze global problems arising from international relations.		
2.0	Develop understanding of cultural variation and analysis.	303-220 Introduction to Cultural Anthropology (3 credits) or equivalent coursework abroad or 421-536 Working with the Culturally Different (2 credits).	Exams, papers and reports averaging a grade of "C."
2.1	Develop understanding of concepts used to analyze cultural variation.		
2.2	Recognize and begin to understand the complexity of cultural variation that exists in the world.		
2.3	Develop a cross-cultural approach to analyzing international problems.		
3.0	Develop understanding of the geography and peoples of the world.	336-104 World Geography (3 credits) or equivalent coursework abroad.	Exams, papers and reports averaging a grade of "C."
3.1	Develop understanding of geographical concepts.		
3.2	Recognize components of the physical setting in which cultures exist and international relations occur.		
3.3	Recognize and analyze the relationships between the physical world, on the one hand, and cultural variation and international relations on the other.		
4.0	Develop introductory knowledge of a second language.	Equivalent of one semester of college level language study (4 credits).	Exams, papers and reports averaging a grade of "C"; or certification of equivalent level of proficiency by the language faculty.
5.0	Develop introductory knowledge of the history, culture and/or social institutions of a country or region other than one's own.	One 2-3 credit area studies course. Students are encouraged to take this course work abroad.	
		Students not going abroad should select one of the following courses: 338-320 History of Russia (3 credits) 338-340 English History (3 credits) 338-360 Asian History (3 credits) 338-380 Latin American History (3 credits) 300-250 Soviet Seminar Tour (2 credits) 300-260 The China Seminar (2 credits) 365-315 Eastern Philosophy (3 credits) Other area studies courses to be developed or Faculty directed independent study or reading.	Exams, papers and reports averaging a grade of "C."
6.0	Integrate knowledge with experience in another country or culture.	500-xxx International Field Experience (one-two credits) (For students studying or working abroad.) Course would include an orientation to the country and culture and a written evaluation of the experience which requires the student to integrate the experience with other learning objectives of the specialization.	Papers or reports averaging a minimum grade of "C."
6.1	Study or work in another culture.		
6.2	Appreciate diversity of cultural values.		
6.3	Integrate intercultural experiences with other knowledge about international relations.	421-576 Cross Cultural Field Experience (one credit). Requires 50 hours of volunteer or other work with people of another culture living in the U.S.	
	SPECIALIZED LEARNING OBJECTIVES	LEARNING ACTIVITY	EVALUATION OF LEARNING
	OPTION A: INTERNATIONAL BUSINESS	Select 9 credits as required below.	Exams, reports and papers averaging a grade of "C."
A.1.	Develop understanding of international business practices.	160-260 Introduction to International Business (3 credits).	
A.2.	Develop understanding of international trade, development, marketing, finance, business law, management and/or transportation.	Select 6 credits from the following: 320-480 Principles of International Trade (3 credits) 320-5xx Economic Development (3 credits) 160-585 International Marketing (3 credits) 160-5xx International Law (3 credits) 160-5xx International Finance (3 credits) 150-5xx International Management (3 credits) 110-5xx International Transportation (3 credits) and/or Faculty directed study or work experience abroad.	

SPECIALIZED LEARNING OBJECTIVES	LEARNING ACTIVITY	EVALUATION OF LEARNING
OPTION B: INTERNATIONAL TOURISM	Select 5-9 credits from the following: B1.0 Identify international components of the tourism industry. B1.1 Recognize the economic role of tourism in a global economy. B1.2 Recognize the role of government in planning/development of tourism. B1.3 Analyze current issues related to international tourism. B1.4 Analyze/become familiar with hospitality and tourism publications. B2.0 Assess quality and quantity of selected tourism resources throughout the world. B2.1 Analyze spatial patterns of connection, circulation, interaction, transportation and communication associated with the geography of tourism. B2.2 Analyze international tourism's locational trends. B2.3 Develop world map reading skills related to tourism. B3.0 Analyze current tourism topics. B4.0 Experience working in tourism industry abroad.	245-240—Introduction to Tourism and the Travel Industry (2 credits). 245-645 Geography of Tourism (3 credits). 245-681 Special Problems in Habitational Resources - Tourism. (2 credits). Internship, field experience or independent study abroad.
OPTION C: LANGUAGE STUDIES	C.1 Develop ability to communicate in a second language.	Equivalent of two years of college level study of a foreign language.
OPTION D: AREA STUDIES	Select 6-9 credits from the following: D.1 Increase understanding of the history, culture and social institutions of a country or region other than one's own.	Select 6-9 credits from the following: Faculty approved study research or internship abroad. (Students are encouraged to take area studies abroad). and/or
OPTION E: COMPARATIVE EDUCATION	E.1 Develop an understanding of the socio-political context of education in other countries. E.2 Develop an understanding of teaching practice appropriate to other countries.	6 Credits 421-xxx Comparative Education (3 credits). 421-xxx Global Perspectives for Educators (3 credits).
OPTION F: CLOTHING, TEXTILES & FASHION	F.1 Increase understanding of international economic trends influencing textiles, clothing, and related areas. F.2 Develop understanding of international centers serving the fashion, clothing, textiles, and related arts area. F.3 Increase understanding of international historical influences on present day fashion and clothing.	Select 6-9 credits from the following: 214-519 International Economic Trends in Textiles/Clothing (2 credits). 214-605 International Study Tour to the Fashion Industries (3-6 credits). 214-610 History of Costume—Ancient to European (3 credits).

INVENTING

The desire to learn is in every creative person, especially to the degree that the results of the study will aid in improved creativity. The student who chooses this all-university specialization will typically have a creative mind and desire to improve his/her inventing skills. The all-university specialization of inventing is intended not only to satisfy these student needs, but also to help solve the societal problems by increasing productivity. Technology has advanced at an extremely rapid pace, but it has not yet been utilized to its fullest potential for the development of new products or processes. By acquainting persons who have creative minds with the most recent advances in technology, chances for new and innovative ideas may increase. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

	INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR OR EVALUATION PROCESS
1	Read mechanical drawings.	Complete the course 130-110 Drafting (2 credits) or equivalent.	Performance examination using simple and complex machine drawings.
2	Produce mechanical drawings.	Complete the course 130-311 Technical Drafting (3 credits) or equivalent. Complete working drawings for an object should be included.	Present completed working drawings to a craftsman for evaluation.
3	Prepare a precise freehand sketch of an object.	Complete the 304-101 Fundamentals of Design (3 credits) and/or 304-503 Design (3 credits) or the following equivalent series: 304-100 Drawing I (3 credits), 304-500 Drawing II (1-3 credits), and 304-305 Presentation Techniques (3 credits).	Performance evaluation: Given an object to sketch, do so with precision and without measuring instruments.
4	Explain mechanical, electrical, fluid and other scientific principles.	Complete physical and technical courses appropriate to the student's special interest area. Courses will be assigned by advisement of technical adviser in consultation with appropriate science department chairperson.	Using an appropriate product which encompasses the desired scientific principles, the student will explain in writing the principles and laws involved.
5	Explain patent procedures.	Conduct an independent study or attend a seminar on patent procedures and law.	Outline the procedure for seeking a patent.
6	Develop a marketing plan for a new product. Set up an organizational structure to produce it.	Complete course 160-230 Small Business Management (3 credits) or complete 160-x98 Business Administration Field Experience (2 credits).	Given a new patent on a product, list the steps to take and resources available to market and produce the product.
7	Operate machine tools and use hand tools in model making.	Depending upon area of interest, take basic technical courses to gain proficiency in that area(s), i.e. 170-101 Processes - Concepts (3 credits); 170-202 Metals (2 credits); 170-250 Plastics I (2 credits); etc.	Produce a model of a new product from a set of working drawings.
8	Select and develop a reading list of trade publications.	Conduct independent study to include in-depth research in at least one trade area which would yield a comprehensive list of trade publications.	List the library resources and procedures necessary to produce a complete list of trade publications in a given area.
9	Relate the biography of selected famous inventors and their major inventions.	Conduct independent study of an approved list of biographical writings about important inventions and inventors.	In an oral exam setting, answer selected questions on why and how a particular invention was developed.
10	Solve problems through logical reasoning, analysis and synthesis.	Complete mathematics course 354-141 Digital Computer Programming (2 credits) and Philosophy, 365-301 Introduction to Logic (3 credits).	Given a complex problem, present in writing an original solution to the problem using, where possible, modern data-handling processes.
11	Recognize an area of need or a specific need or problem. Explore and show multiple approaches to solving that problem through idea sketching, model building, verbalization or any other means that will give insight into the problem solution.	Complete courses which focus on problem solving and presentations, such as 304-300 Design Theory and Methods (3 credits), 304-330 Industrial Design I (3 credits), 304-340 Industrial Design II (3 credits), and 304-430 Industrial Design III (4 credits).	Make a presentation to a jury of experts. The presentation would include approaches to the problem and solutions selected to satisfy a need or solve a specific problem.
12	Present a complete proposal for an invention.	Consult with staff as needed, via independent study.	Evaluation and critique by program committee for all-university specialization.

TRAINING AND HUMAN RESOURCE DEVELOPMENT

Education is not the sole province of schools. Programs of instruction are conducted by many businesses, industries, in the military, and by other groups and organizations. Planning and providing this instruction is the province of professionals usually identified as "trainers." In our technological society, training programs have become increasingly complex and demands on trainers have increased. Greater expertise on their part is required. This all-university specialization addresses needs for preservice and in-service education for trainers.

This program is intended for students who have expertise in areas such as engineering, technology, education, business, government, military and labor, and who desire to become involved in development and implementation of training programs. These students bring to the program a knowledge of their professional area and, in some cases, experience in training programs.

The all-university specialization consists of a series of courses and an internship. In all, completion of the all-university specialization will require at least 17 credits in course experiences, plus an additional 4-8 credits for the internship. The internship designed for the training specialization is central to the program, hence it appears as a part of the experience required to meet each objective of the specialization. The credits assigned to individual internships will vary from 4-8, depending on the extent of the specific objectives designed in the "education agreement." The length of the internships will vary, depending on the credit assigned, but in every case will be two or more weeks, full time, per credit earned. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

	INTENDED OUTCOME	LEARNING ACTIVITY	ACHIEVEMENT INDICATOR or EVALUATION PROCESS
1	Utilize acceptable analysis procedures in determining training needs in the trainer's professional area.	Complete the courses: 199-534 Task Analysis (2 credits), 198-550 Introduction to Industrial Training (2 credits), 198-589 Internships (4-8 credits). <i>Select either of the following:</i> 150-600 Organizational Leadership (3 credits), 479-582 Human Resource Management (3 credits).	Successful completion of courses at left (7 credits). Successful completion of the contractual agreement of the internship as determined by the Stout supervisor in consultation with the business, industry, government or military supervisor, and successful completion of a field report. (Minimum 4 credits)
2	Design a training program based on established needs.	Complete the course 600-560 (2 credits), Audiovisual Communications; a course from the appropriate school in curriculum development or course construction (2-3 credits) †; a course on the Psychology of Learning (2 credits)††; and a course on teaching methods or strategies (2 credits)§. Complete the course 198-589, Internship.	Successful completion of courses at left. (Minimum 8 credits) Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the Stout supervisor. Completion of a field report is required.
3	Implement and coordinate a training program; design and teach training courses.	Complete the course xxx-680, Internship.	Successful completion of the contractual agreement for the internship. Success is evaluated by the business, industry, government or military supervisor, and by the Stout supervisor. Completion of a field report is required.
4	Evaluate the effectiveness of training courses or programs.	Complete a course on evaluation and/or program evaluation (2 or 3 credits), such as 421-742 Program Evaluation (3 credits), 421-641 Education Evaluation (2 credits), 190-406 Instructional Evaluation in Industrial Education (2 credits), 199-640 Instructional Evaluation in Vocational Education (2 credits) or 242-710 Applied Evaluation in Home Economics (2 credits). Complete the course 198-589, Internship.	Successful completion of course at left. (Minimum 2 credits). Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the Stout supervisor. Completion of a field report is required.

† Such as 190-405 Curriculum Development in Industrial Education (2 credits); 190-638 Course Construction (2 credits); 196-401 Distributive Education Curriculum (3 credits); 199-638 Course Construction for Vocational Educators (2 credits); 421-438 Curriculum Development (2 credits); and 242-301 Home Economics Curriculum (3 credits).

†† Such as 479-530 Psychology of Learning (3 credits); 421-303 Educational Psychology (2 credits); 421-685 Psychology of Adult Education (2 credits).

§ Such as 190-205 Methods of Teaching Industrial Education (2 credits); 196-301 Methods in Distributive Education (4 credits); 199-605 Methods of Teaching Vocational Education (2 credits); 421-714 Teaching Strategies (4 credits); and 242-201 Teaching Techniques in Home Economics (2 credits).

Note: Courses numbered 700 and above are open to graduate students only.

MINORS

Minors are defined as either "studies in the discipline" or as "teaching". Teaching minors are those approved by the State Department of Public Instruction for certification. Requirements for the teaching minors include an education major, the methods course 421-305 in the minor, and some student teaching experience in the minor field, in addition to the required credits within the minor. The Approval Form for Minor Program must be submitted to the department offering the minor before starting the minor to assure an acceptable sequence of courses. Approval forms and minor program plans are available in the office of the department offering the minor.

AGING FAMILY

This minor addresses a major societal concern about the improvement of quality of life for people in families of all ages. Sixteen to 19 credits are required. A practicum or clinical experience with the aging must be included. The minor must be planned with and approved by an adviser. Consult the Office of Associate Dean, School of Home Economics.

ART

Twenty-two credit hours are required. Required courses are 304-100, 304-101, and 304-522. The additional 13 elective credits may be accumulated to overview or concentrate in one area. Students may select courses in Drawing, Painting, Printmaking, Ceramics, Art History, Art Metals, Sculpture, Interior Design, Industrial Design and Graphic Design to fulfill the balance of the Art minor.

AVIATION/AEROSPACE STUDIES

A minimum of 23 semester hours is required for a minor in Aviation/Aerospace Studies.

Required courses for either option are 110-630, 110-631, 170-560, 195-300, and 372-221. Additional required courses for the teaching minor are: 110-635 or 110-x99 and 190-205 or 421-305. Some student teaching is required in Aerospace Education.

BIOLOGY

A minor consists of 22 semester hours of biology. The required courses in biology are 308-132, 308-142, 308-152, and 308-306. Additional courses to complete 22 semester hours of biology will be selected. Of these no more than two of the courses 308-150, 308-332 and 308-342 will be acceptable. The course 308-122 is acceptable only when taken before the courses 308-142 and 308-152.

All students entering a minor program in biology will be assigned a faculty adviser to aid the student in proper scheduling of courses.

BUSINESS ADMINISTRATION

A minor in Business Administration consists of 22 semester hours. The minor must be approved by the Department of Business. Required courses are 150-304, 160-206, 160-207, 160-330, 320-210 and 320-215 (18 credits). Elective courses may be selected from any business course or other course(s) approved by the Department of Business. (4 credits).

CHEMISTRY

Twenty-two semester hours are required. Required courses are 311-115, 311-125 or 311-135, 311-136, 311-201, and 311-203. At least one of 311-204 or 311-531 or 311-535 plus additional selected chemistry courses to obtain 22 semester hours. Chemistry minors who plan to obtain teaching certificates are required to select 311-501, 311-503, and 311-535 plus an additional two-semester hour course 421-305, for a total of 24 semester credits.

COACHING CERTIFICATION/ MINOR

A minor in coaching consists of a minimum of 22 semester hours. Eighteen semester hours are required for certification with at least one course in each of five areas. Asterisk (*) denotes required courses. Area I: 366-340* and 366-350*; Area II: 367-350, 367-360 and 367-450; Area III: 367-401, 367-460, 367-461, 367-465, 367-470, 367-471 and 367-478; Area IV: 308-132*, 366-355*; Area V: 366-102 and 366-365*. Area VI contains elective courses for the 22-credit minor only: 229-202, 367-187, 367-345, 367-346, 367-347, 367-480, 367-490 or 367-499.

COMPUTER SCIENCE

Twenty-two semester hours are required for a minor program in Computer Science. The minor program is to be planned with and approved by the Department of Mathematics. Required courses are 354-144, 354-145, 354-241 and 354-341. Additional courses will be selected by the student and the Department.

ECONOMICS

Students may elect a 22-credit minor in Economics either for teaching or for the discipline minor. Required courses are 320-210, 320-215, 320-325, or 320-470, 320-410 and 320-415. Additional economics courses will be selected. Both 320-335 and

320-440 and both 320-420 and 320-421 may not be applied to the minor. Students who take a teaching minor must also take 421-305, Teaching Practicum, 2 credits, in addition to the 22-credit minor.

ENGLISH

A teaching minor in English consists of 22 semester hours in English plus two semester hours in Education Methods. A discipline minor in English consists of 22 semester hours in English.

Students must have 2.5 grade point in English courses to be awarded the minor. All English minor programs must be approved by the Department of English.

Students who wish to be certified to teach English must take a teaching minor in English. A teaching minor in English must include the following courses: 326-340, 326-402, 326-406, 421-305. From each of the following sets, students must choose at least one: a) 326-344 or 326-347; b) 326-350, 326-355, 326-360; c) 326-348, 326-400, 326-401. Additional credits will be selected from the offerings in English, exclusive of 326-101 and 326-102, 326-111, Honors, and 326-112, Honors, may be included.

A discipline minor in English for those who do not wish to be certified to teach is taken with an option in either literature or writing.

The English minor with an option in literature must include one course in English Literature (326-350, 400, 401, 406) and one course in American Literature (326-346, 360). The remaining 16 credits may be selected from the other literature offerings; one advanced writing course may be included; 326-347 is suggested.

The minor in English with an option in writing includes courses from the following blocks: (a) language (minimum of three semester hours); (b) literature (minimum of six semester hours); (c) writing (minimum of 11 semester hours); and (d) electives (minimum of two semester hours from any of the above blocks).

FOOD TECHNOLOGY

Thirty-four semester hours are required for a Food Technology minor. Required courses are 150-200, 170-280, 229-124 or 229-240, 229-212, 229-638, 229-642, 229-650, 308-306, 311-511, 311-515 and 372-211.

This minor would combine best with food-related Home Economics majors, Industrial Technology, Business Administration and Applied Mathematics. Students may obtain forms and additional information from the Food and Nutrition Department office.

HISTORY

Students may elect a 22-credit minor in History either for teaching or for the discipline. Required courses are 338-120, 338-121, 338-140 and 338-141. Additional history courses will be selected. Course 336-104 may be included.

Students who take a teaching minor must include two of the following courses: 338-322, 338-360, and 338-380 and, in addition to the 22-credit minor, must take 421-305 Teaching Practicum, 2 credits.

JOURNALISM

Twenty-two semester hours are required. The student must have a 2.5 grade point in courses submitted for the minor. (A) Required courses are 130-140, 326-306, 326-310, 326-410, 326-425, 120-504. (B) At least one course must be chosen from this group: 326-320, 326-347, 326-515, 326-546. (C) Seven more semester hours must be chosen, either from more courses in group B, or else from the following: 130-246, 160-370, 326-310, 326-518, 391-120/5, 391-244, 391-554, 479-579, 120-632, Field Experience and Independent Study.

MATHEMATICS

A minor program in Mathematics may be chosen as a teaching or a discipline minor. Either program is to be planned with and approved by the Department of Mathematics. The program leading to teaching certification requires 24 semester hours. The required courses are 354-331 or 354-530, 355-153 or 355-156, 355-262, 355-275, 355-370 and 421-305. Additional courses will be selected by the student and the Department.

A discipline minor in Mathematics requires a minimum of 22 semester hours. The required courses are: 355-153 and 355-154, or 355-156 and 355-157. Additional courses will be selected by the student and the Department.

PHYSICS

Twenty-two semester hours are required. Required courses are 372-529 and either 372-241 and 372-242 or 372-281 and 312-282. At least nine credits with a 300 number or greater must be included in the minor program. All minor programs must be planned with and approved by the Physics Department.

PROPERTY MANAGEMENT

Property Management minors will complete 28 credits. The minor consists of 130-180, 150-450, 160-206, 160-318, 160-365, 245-200, 245-x98, 245-6xx (3 credits) 245-6xx (2 credits); either 212-535 or 479-570; and 5 additional elective credits. The administrator of the department of Habitational Resources coordinates ad-

visement and approvals for the property management minor.

PSYCHOLOGY

Twenty-two semester hours are required. Required is 479-110, 479-460 or 479-561 and one of the following: 354-130, 354-530, 479-190, 479-690, 421-641, 479-251 or 479-552. Courses from which to select 11 or more semester credit hours include: any of the courses listed above not already taken; 303-220, 308-650, 308-651, 326-541, 387-250, 413-675, 421-303, 431-532, 459-585, 479-120, 479-150, 479-281, 479-390, 479-484, 479-530, 479-535, 479-540, 479-570, 479-571, 479-574, 479-581, 479-582. Field Experience and Independent Study in Psychology.

SOCIOLOGY

Twenty-two semester hours are required. Required courses are 387-110 and 303-220. Additional sociology courses will be selected, 303-250 and 303-300 may be included.

SPEECH

A teaching minor in Speech consists of 24 semester hours. Required courses include 391-101, 391-102, 391-200, 391-202, 391-206, 391-208, 391-210, 391-310, 391-512 and 421-305. Additional courses may be selected from speech electives.

A discipline minor in speech consists of 22 semester hours with the following four options: General Speech, Communications and Public Address, Radio-Television, and Theater. Each minor includes a minimum of 10 semester hours in the option plus 12 semester hours from the remaining three areas. A maximum of three credits may be selected from communication related courses offered by other departments when approved by the Speech Minor adviser.

A minimum grade point average of 2.5 with no grade lower than "C" is required for courses applied to the minor. Students must fulfill a residency requirement by successfully completing at least six (6) credits of the minor from courses offered by the Speech Department. The speech minor adviser will certify completion of the residency requirement.

TECHNICAL WRITING

Twenty-two semester hours are required. Four courses must be taken: 326-347, 326-425, 326-515, 326-546. At least two courses must be taken from this group: 326-306, 326-320, 326-346, 326-410, 326-525. Up to six credits may be selected from this group: 130-140, 130-246, 130-414 A-C, 160-370, 300-x49, 326-xxx (any literature), 365-301, 391-508, 600-504.

TOURISM

A minor in Tourism consists of 24 semester hours. Required courses are 245-240, 245-340, 245-341, 245-640, 245-645 and 245-682. The language requirement consists of four semester hours of (French) 328-101, 328-102, (Spanish) 329-103, 329-104 or a comparable number of hours of a well-known language used in international travel and trade, such as German, Italian, Russian, Chinese, Portuguese or Japanese. Minors in Tourism must also complete five-semester hours of approved elective credits. This minor in Tourism is coordinated by the administrator in the department of habitational resources.

TRAFFIC SAFETY

Twenty-two semester hours are required. Required courses are 140-271, 140-375, 140-377, 140-574 and 140-575; at least 7 credits are selected from: 140-580, 190-205, 190-405, 242-201, 242-301, 366-340, 413-501, and 421-303.

WOMEN'S STUDIES

Twenty-two semester hours are required. Required courses are 300-510, 300-511, 326-372, 387-275, 479-574. Additional courses will be selected from courses relevant to women's studies in various disciplines, including Independent Study. The minor must be planned with and approved by an adviser. Consult the Office of the Dean, School of Liberal Studies.

COURSE DESCRIPTIONS

COURSE NUMBERING SYSTEM

Stout uses a six-digit course numbering system. The first three digits designate the school and department offering the course. The School of Industry and Technology courses begin with 100; Home Economics—200; Liberal Studies—300; and Education—400. Courses beginning with 500 are administered by the Vice Chancellor's Office. In June of 1988, Learning Resource courses formerly numbered in the 600 series will be in the 120 series in the School of Industry and Technology.

The second three digits of the course number refer to the course level. The 100 series is primarily for freshmen; 200—sophomore, 300—juniors; and 400—seniors. The 500 series is junior/senior level but is also appropriate for graduate credit. The 600 series is senior and graduate level; 700 series is graduate level only; and the 800 series is available to graduate students at the Ed.S. level only.

COURSE SCHEDULING

A letter system has been developed to help students plan course schedules. Letters following course descriptions indicate when a course is usually offered. F—Fall Semester; W—Winter Semester; S—Summer Session; SO—Summer Session odd numbered years; SE—Summer Session even numbered years. Courses not lettered follow no usual pattern. The system does not guarantee that a course will be offered during a particular semester.

Courses which are repeatable for credit and those for which a special course fee applies are also noted in the catalog description.

INDUSTRY AND TECHNOLOGY

100-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2," "3," or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

100-110 Craft Seminar I 1 Cr. Seminar emphasizing historical perspectives of the crafts field, contemporary trends and the nature of aesthetics. F-W-S

100-500 Introduction to Futures Study 2 Cr. Methods of future projection, orienting thought toward future alternatives; impact of future problems on major areas of human activity. F

100-525 Advanced Futures Study 1 Cr. Student-designed futures study based on application of methods to student's program area. Prerequisite: 100-500.

100-590 Technical Service Schools .5-6.0 Cr. Some special-purpose technical courses offered by manufacturers are suitable for college credit. Guidelines: 1) student makes all arrangements with manufacturer offering course; 2) one credit is awarded for each full week (40 clock hours) of attendance; 3) student enrolls and pays fees at university prior to taking course; 4) approval of Dean of S.I.T. needed before enrolling for credit; 5) Graduate College approval required for students taking course for graduate credit. S

ENERGY AND TRANSPORTATION

110-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2," "3," or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

110-103 Power Mechanics 2 Cr. Internal and external combustion heat engines, mechanical and fluid transmission systems; present and future applications and limitations. Laboratory work emphasized. Special course fee. F-W-S

110-104 Fundamentals of Electronic Systems 3 Cr. Electricity/electronics in its daily personal, home, auto and job applications. A non-mathematical, consumer oriented approach to what makes electrical devices work and practical care and upkeep of them. For non-technical programs. F-W

110-204 Electricity/Electronics Fundamentals 3 Cr. Electricity/Electronics, associated phenomena related to basic electrical and electronics systems. Examines devices, operation, application, theory from power devices to electronic devices, controls to microprocessors. Prerequisite: College level mathematics capability. F-W-S

110-209 Power Mechanics—Small Engine Service 2 Cr. Mechanical principles and functions of small power units. Operation, maintenance, tune-up and overhaul procedures of small two- and four-cycle engines. F-W

110-210 General Motor Mechanics 2 Cr. Consumer knowledge on automobile chassis, internal combustion engine components, fuels, ignition, suspension, and drive systems including service and adjustment techniques. F-W

110-260 Introduction to Fluid Power 2 Cr. Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. F-W-SE

110-270 Circuit Analysis 4 Cr. Introductory concepts and analysis techniques in DC and AC circuit analysis including current, voltage, resistance, capacitance, inductance, impedance, loop and node equations, transients, network theorems, real, reactive, and apparent power in AC circuits. Prerequisites: 355-153 or 355-156, 372-221, Industrial Technology; 355-156 (367-281 corequisite) Applied Technology.

110-272 Microprocessor Interfacing 3 Cr. Various sensors, transducers and controllers are interfaced with emphasis on the hardware/software interaction. Experiments include RS-232 and fiber optic communication, graphics, input and output, temperature and pressure control, and speech synthesis and recognition. Prerequisite: 110-271, or equivalent. F-W

110-280 Networks 4 Cr. Networks based on differential equations. Classical and Laplace transform solution of network equations, complex impedance, introduction to state variable theory, two-port parameters. Frequency response techniques including Fourier series and Fourier transforms. Prerequisites: 355-255, 110-270.

<p>110-303 Mechanical Power Transmission 3 Cr. Fundamentals of mechanical power transmission: theory of operation, selection of components, suggestions for application, and analysis of systems. F-W</p>	<p>110-376 Electronics Fabrication Laboratory 2 Cr. Overview of thick-film/thin-film microelectronics -fabrication, design and application. Printed circuit-board design and fabrication, and principles of soldering. Special course fee. Prerequisite: 110-371.</p>	<p>110-504 Energy Technology 3 Cr. Energy sources, and power applications. Economical, political, and environmental ramifications. Conversion, storage, control, instrumentation, transmission, and utilization. Special course fee. F-W-S</p>
<p>110-308 Thermodynamics of Internal Combustion Engines 2 Cr. Fuels, oxidants and propellants; combustion, combustion processes and gas laws. Prerequisites: 355-120, 355-121 and 372-221. W</p>	<p>110-314 Chassis and Ride Control 2 Cr. Automotive suspension systems, ride control and brakes. Laboratory work on wheel alignment, balancing, steering systems, and brake rebuilding. Prerequisite: junior standing. W</p> <p>110-315 Cooling and Heating 1 Cr. Theory of operation, typical routine service and component diagnostic procedures for automotive air conditioning, heating and cooling systems. W</p>	<p>110-381 Linear Electronic Circuits 3 Cr. Analysis of integrated and discrete transistor circuits including common transistor arrays, analog signal processing using operational amplifiers, negative feedback amplifiers, high and low frequency response, low frequency response, low frequency class A and B power amplifiers and electronic voltage regulator circuits. Special course fee. Prerequisite: 110-371.</p>
<p>110-343 Introduction to Solid-State Electronics 3 Cr. Theory and use of discrete and integrated solid-state devices. Application and use of selected laboratory equipment and devices. Prerequisite: 110-204. F-W</p>	<p>110-411 Electrical Circuits and Tune Up 3 Cr. Diagnosing problems in automobile electrical, fuel and exhaust systems. F</p>	<p>110-506 Energy Management 2 Cr. Evaluate industrial facilities and equipment for energy efficiency and feasibility of modification for improving consumption; current and alternative techniques for overcoming energy loss. F-W</p>
<p>110-344 Electric Power & Distribution 2 Cr. Single and polyphase residential, commercial, industrial wiring systems, codes and standards. Prerequisite: 110-204. W</p>	<p>110-473 Digital Logic and Switching 3 Cr. Analysis and synthesis of combinational and sequential switching circuits. Boolean algebras and number systems, switching functions, minimization, single and multiple output networks, realization of functions. Finite state sequential machines, state transition diagrams, machines and state equivalence, incompletely specified machines, machine realization. Algorithmic state machines and asynchronous state machines. Prerequisite: 110-371. F-W-S</p>	<p>110-511 Carburetion and Emission 2 Cr. Operational principles, diagnostic procedures and defective component repair of fuel and emission control systems. Prerequisite: 110-411. W</p>
<p>110-348 Motors and Generators 2 Cr. Rotating machinery concepts; D.C. generators, motors; synchronous motors, generators; induction motors; controls. Prerequisite: 110-204. F-W</p>	<p>110-474 Digital Electronics 3 Cr. Junction and field effect transistors as switches, basic digital and switching circuits, bipolar and MOSFET logic families, digital integrated circuit schemes and building blocks, multivibrators, memory elements, digital to analog and analog to digital converters. Prerequisites: 110-371, 110-473. F-W-S</p>	<p>110-517 Applied Integrated Circuits 3 Cr. Application of integrated circuits in analog/digital systems: analog measurement, data conversion and introduction to microprocessors. Prerequisite: Ten credits in Physics and/or Electronics. W</p>
<p>110-361 Industrial Hydraulics 2 Cr. Theory, operation and construction of hydraulic systems and circuits; pumps, reservoirs, lines, control valves and actuators. Prerequisite: 110-260. F</p>	<p>110-477 Service Management 2 Cr. Auto service management, planning and layout of service facilities, selection of tools and equipment, and development of curriculum and/or work schedule. W</p>	<p>110-523 Artificial Intelligence Applications 3 Cr. Methodology and problem-solving techniques of contemporary application-oriented artificial intelligence. Prerequisite: 354-341. F-W-S</p>
<p>110-362 Industrial Pneumatics 2 Cr. Theory, operation and construction of pneumatic and pneumatic/hydraulic system components, with application to basic industrial circuits; compressors, plumbing, control valves and actuators. Prerequisite: 110-260. W</p>	<p>110-482 Electronic Communication Fundamentals 3 Cr. Investigation of amplitude modulation, frequency modulation, single-side band and pulse modulation electronic communication systems. Theory of modulation and demodulation, noise and a study of transmitter and receiver configurations. Prerequisites: 354-331, 110-381.</p>	<p>110-530 Digital Logic Systems 3 Cr. Digital circuit design and analysis using counters, registers and logic gates. Semiconductor memories -random access memories, read only memories, analog to digital converter, and digital to analog converters, arithmetic logic unit, multiplexers and demultiplexers. Prerequisite: 110-473.</p>
<p>110-371 Solid State Electronics 3 Cr. Basic semiconductor theory for solid state devices including diodes and transistors. Biasing and small signal analysis of transistor amplifiers. Introduction to operational amplifiers and integrated circuit terminology. Prerequisite: 110-270.</p>	<p>110-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in an approved paraprofessional position in business and industry. Salaried appointments in area of student concentration with cooperating companies for a semester or summer session. Prerequisite: junior standing or consent of department.</p>	<p>110-542 Computer Applications in Electronics 3 Cr. Microprocessor application at a system level. Use of hardware and software design aids such as: assemblers, text editors, compilers, read only memory emulators and system projects related to specific microprocessors. Introduction to the 16 bit microprocessors, 8 bit slice processors, signal processors and controllers. Prerequisite: 110-575.</p>
<p>110-372 Electromechanical Energy Conversion 3 Cr. Concepts in electromechanical energy conversion, DC motors and generators, AC alternators, AC synchronous motors, poly and single phase induction motors, motor starting and speed control circuits. Prerequisite: 110-371.</p>	<p>110-501 Transportation 2 Cr. Needs, preparation, methods, destination and control of transportation as it relates to society and industry. Special course fee.</p>	<p>110-543 Linear Circuits 3 Cr. Linear discrete and integrated solid-state devices used in amplifiers, oscillators, other practical circuits. Application and use of selected laboratory equipment and devices. Prerequisite: 110-343. F-W</p>

110-551 Introduction to Microprocessors 3 Cr. The examination of the working components of a simple microprocessor system, machine language programming, registers, memory, input-output and application such as: security, energy monitor, control, communication, transportation, etc. Prerequisites: 300-101 and basic electronic background or equivalent. F-W

110-552 Electronic Communications 3 Cr. Electrical/electronic communication systems; modulation, demodulation, r.f. and i.f. amplifiers, alignment, antennas, composite TV signal, receivers, transmitters. Prerequisite: 110-204. F

110-553 Instrumentation and Control 3 Cr. Industrial measurement, control, open loop, closed loop, analog, digital, electric/electronic, fluidic, mechanical, pneumatic. Prerequisite: 110-371. W

110-554 Electronics/Robotics 3 Cr. Robotic power and control systems, including base power sources, microprocessor controllers, data handling and programming. Special features such as voice synthesis, motion detection, light detection and noise detection are overviewed. Prerequisites: 110-551, 110-204.

110-556 Digital Circuits 3 Cr. Logic gates; Boolean algebra; number systems, codes and operations; combinational, sequential, arithmetic logic, memories. Prerequisite: 110-343. F-W

110-573 Computer Technology 4 Cr. A detailed investigation in the design, manufacture and operation of computer and peripheral integrated circuits, including microprocessors, microcomputers, ROM, RAM, EPROM, bubble memory and various LSI circuits. Prerequisites: 110-517, 372-518, or equivalent. F

110-574 Microprocessor Fundamentals 3 Cr. Overview of present day microprocessor technology. Function, analysis and operation of selected microprocessors. Memory, input/output interfacing devices. Basic machine/assembly and structured language programming and hardware application. Prerequisite: 110-371.

110-575 Microprocessor Interfacing 3 Cr. Interfacing principles of microprocessor based microcomputer systems. Input/output techniques, input/output mapping, asynchronous/synchronous communication, parallel/serial conversion. Microprocessor application such as control systems, energy monitor, cooking and communications. Prerequisite: 110-574.

110-582 Electronic Communication Systems 3 Cr. Modern communication systems including transmission lines, wave guides, electromagnetic propagation, basic antenna theory. Introduction to digital communication including bit error probability, digital filtering, pulse code modulation and error detecting and correcting codes. Prerequisite: 110-482.

110-583 Fundamentals of Control 4 Cr. Analysis of elementary control systems via classical and Laplace transform techniques, frequency response and root locus plots, block diagrams and transfer functions, open and closed loop systems, stability considerations, digital to analog conversion, microprocessor based control systems. Prerequisites: 110-280, 110-574.

110-584 Microwave Systems 3 Cr. Introduction to microwave theory, devices and applications, transmission lines and antennas, waveguides and associated components, microwave tubes, microwave solid state devices, MASER's, LASER's and basic concepts in infrared radiation and detection. Prerequisite: 110-482.

110-585 Electric Power Distribution 3 Cr. Characteristics of large scale commercial power distribution systems, properties of transmission lines, power and frequency control in interconnected systems, load flow analysis using symmetrical components, fault analysis and load shedding techniques, stability, underground power transmission and DC power transmission. Prerequisites: 110-280, 110-372.

110-586 Instrumentation 3 Cr. Descriptive and analysis of thermal, mechanical, acoustic, optical, pneumatic and electromagnetic sensors, measuring systems, calibration, performance of measuring systems, analog and digital signal conditional. Measurement of frequency and time and analysis and performance of display units. Prerequisite: 110-583.

110-587 Optical Fiber Communications 3 Cr. Fiber optic communications, optical waveguides, analog and digital modulation techniques, transmitters, receivers, repeater technology, analysis of signal distortion, losses and dispersions, applications in telecommunications and computer networks. Prerequisite: 110-280. F-W

110-595 Automotive Technical Update Seminar 1-2 Cr. Individuals participating in the three-day seminar will become familiar with the latest developments in computer engine control systems, learn the latest diagnostic and training procedures and become updated on other system developments. F-W-S

110-603 Problems in Power Transmission 3 Cr. Analysis of power transmission problems. Recommendation of alternate solutions including advantages, disadvantages and economic considerations. Prerequisites: 110-240, 110-260, 110-303, 110-348, 110-548 or consent of instructor. W

110-614 Transmission and Drive Trains 2 Cr. Power transmission through gears, clutches and drives common to the automobiles. Fluid couplings, gear sets, differentials, transmissions and drive lines. Prerequisite: 110-314. W

110-615 Engine Machining and Rebuilding 3 Cr. Rebuilding of fourstroke cycle engines including all necessary precision machining; cylinders, blocks, valve trains and reciprocating parts. Prerequisite: junior standing. F-W

110-622 Automotive Practicum 2 Cr. Troubleshooting and servicing all automobile functions as typically done in an auto service facility. F

110-630 Aviation/Aerospace Studies 3 Cr. Classroom, field and optional flight experiences relating to aviation and aerospace industries; details of space exploration, federal licensing regulations, air traffic control and related career guidance information. F

110-631 Private Pilot's Ground School 3 Cr. Preparation for F.A.A. Private Pilot's Certificate: airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general aircraft operation and flight theory. F-W

110-635 Introduction to Flight 2 Cr. Flying a single-engine aircraft: applied flight theory, dual flight instruction and solo flight. Prerequisite: 110-631.

110-640 Techniques for Network Analysis 3 Cr. Differential equations applied to electric circuit parameters, network equation solutions using digital and analog computers. Prerequisites: 110-204 and 355-255. W

110-683 Control Systems 3 Cr. Introduction to modern control theory, state variable theory of control systems, controllability and observability, stability of linear and nonlinear systems, discrete time control systems, elementary concepts of optimal control systems, control law implementation using microprocessors. Prerequisites: 110-583, 355 275 (corequisite).

110-689 Development Practicum 4 Cr. Project research and design, specification control drawing documentation. Project construction and a technical paper presentation. Special course fee. Prerequisite: advanced standing.

110-695 Automotive Service Experience 2 Cr. Off-campus job in garage or dealership provides skills and knowledge of automotive servicing beyond classroom and laboratory work. W

MEDIA TECHNOLOGY

120-504 Elementary Photography 2 Cr. Fundamentals of photography: aesthetics, basic theory, camera operation, film selection, lighting, roll-film processing, contact printing, enlarging and print finishing. Student must provide own camera. (Prior to June 1, 1988, this course was numbered 600-504.) F-W-S

120-535 Film—History and Appreciation 3 Cr. Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers. (Prior to June 1, 1988, this course was numbered 600-535.) F

120-540 TV—Appreciation and Criticism 2 Cr. Analysis of major TV program types; positive and negative contributions of TV; commercials; children's programming; TV viewing diary; development of TV Action Plan. (Prior to June 1, 1988, this course was numbered 600-540.) W

120-560 Audiovisual Communications 2 Cr. Methods of evaluating and using audiovisual materials effectively; experience in operating equipment; basic techniques of media preparation. (Prior to June 1, 1988, this course was numbered 600-560.) F-W-S

120-561 Advanced Graphic Production 2 Cr. Advanced techniques for planning, designing and producing materials for instruction and graphic training. (Prior to June 1, 1988, this course was numbered 600-561.) Prerequisite: 600-560. F-W-S

120-570 Introduction to Computer-Assisted Instruction 2 Cr. Application of computers to training and instruction. Theory and design of instructional material for presentation by the computer. Courseware development tools and their use. (Prior to June 1, 1988, this course was numbered 600-570.) Prerequisite: consent of instructor or curriculum course. S

120-580 Microcomputer Applications—Words/Data 2 Cr. Applications of specific commercial microcomputer programs for personal, professional, and student use. Emphasis on word processing, numerical and file management programs. (Prior to June 1, 1988, this course was numbered 600-580.) W-S

120-605 Advanced Photography 2 Cr. Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques. (Prior to June 1, 1988, this course was numbered 600-605.) Prerequisite: 600-504. F-W-S

120-625 Broadcast TV Production Internship 1-4 Cr. Practical experience in all phases of broadcast color television program production. Student develops internship program with teleproduction center manager. One credit per 40 hours of work experience. (Prior to June 1, 1988, this course was numbered 600-625.) Prerequisites: 600-630 and 600-632 or consent of instructor.

120-630 Audio/Film/TV Production Fundamentals 3 Cr. Instructional film, audiotape and videotape production fundamentals. For media technology majors; not open to those taking 391-554. (Prior to June 1, 1988, this course was numbered 600-630.) F-S

120-640 Telecommunication Systems and Teleconferencing 2 Cr. Interactive teleconferencing techniques. Applications, effective utilization and cost-effectiveness of information distribution systems, including telephone, television, teletext, videotext, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics. (Prior to June 1, 1988, this course was numbered 600-640.) F-W-S

120-645 Color Photography 2 Cr. Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. (Prior to June 1, 1988, this course was numbered 600-645.) Prerequisite: 600-504. F-W-S

120-655 Slide/Tape and Multi-Image Production 2 Cr. Practical experience in planning, producing, and presenting media productions for instruction/training. Advanced applications of photography, audio, video, and programming related to slide/tape and multi-image presentations. (Prior to June 1, 1988, this course was numbered 600-655.) Prerequisites: 600-560 and 600-630. W

GRAPHIC COMMUNICATIONS

130-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

130-X97 Field Experience 1 Cr. F-W-S

130-X98 Field Experience 2 Cr. F-W-S

130-100 Communications 2 Cr. Communication concepts of source, message, receiver, feedback and interference studied in the context of communication/information technology. F-W-S

130-103 Communication and Information Technology 3 Cr. Limits and possibilities of various communication components and systems applied to the solution of communication problems in business and industry. Intended for General Business Administration students. Credit not available to students who have completed 130-100. Special course fee. F-W-S

130-110 Drafting 2 Cr. Projection concepts for representing 3-dimensional forms on 2-dimensional surfaces; shape and size description and drafting techniques. Special course fee. F-W-S

130-120 Construction Drafting 2 Cr. Architectural drafting with emphasis on theory and delineation. Drawing media and equipment are utilized in solving problems relating to building construction. F-W

130-140 Graphic Arts 2 Cr. Concepts of reproducing visual images; design and layout, composition, photo conversion, image carriers, image transfer, finishing and binding, and economics of graphic arts. Special course fee. F-W-S

130-180 Hospitality/Living/Institutional Facility Planning 2 Cr. Basic architectural drafting and design content, concepts, media, techniques, and methods to record and communicate ideas and solve problems. Special course fee. F-W-S

130-212 Descriptive Geometry 3 Cr. Graphic representation and solution of space problems involving points, lines, planes, intersections, revolutions and vectors. Prerequisite: 130-110. F

130-221 Architectural Design I 3 Cr. Develop graphic simulation techniques and problem-solving abilities; site planning, space requirements, housing codes, structure, light frame construction, solar and earth integrated designs, mechanical and electrical systems. Prerequisites: 130-110 or 130-120 or 130-180 or consent of instructor, consent of instructor F-W-S

130-234 Interactive Graphics 2 Cr. Interactive graphics in design and drafting: computer, teletype, CRT terminal, digitizer and plotter. Prerequisite: 130-110. F-S

130-246 Typography 2 Cr. Printing and art mediums, photography, layout and keylining, type classification and selection, composition practices, color systems and materials. Lab work in preparing copy for production. Prerequisite: 130-140 or consent of instructor. F-W

130-251 Composition 3 Cr. Photo-type-setting: photo-lettering, text and editing systems; pasteup and copy preparation techniques; copyfitting, word and image processing, telecommunications and interfacing to computer systems. Special course fee. Prerequisite: 130-140 or consent of instructor. F-W

130-263 Flexography and Gravure 2 Cr. Flexographic and rotogravure printing processes. Design for flexo and gravure, film and image assembly, plate and cylinder preparation and printing by the two processes. Present applications and future trends. Prerequisite: 130-140.

130-290 Mechanics of Solids I 3 Cr. Technical calculations, dimensional analysis, freebody diagrams, force systems and equilibrium, friction, elementary statically determinate framed structures, and simple stress. Prerequisite: 372-221. F-W

130-291 Mechanics of Solids II 3 Cr. Stress and strain, torsion, bending of beams, compound stress, principal stress, deflection of beams, statically indeterminate members and columns. Prerequisites: 130-290, 355-154. W

130-311 Technical Drafting 3 Cr. Drafting concepts and techniques in manufacturing industries; graphic language of orthographic projection for use in design, assembly, manufacturing and sales. Prerequisite: 130-110. F-W-S

130-325 Architectural Design II 3 Cr. Programming and analysis, design solution, presentation and design development drawings for commercial and/or public buildings; scale, site, codes, energy, acoustics, structure and their relation to form. Prerequisite: 130-221. F-W

130-341 Graphic Communications Processes 2 Cr. Offset lithography, relief, screen printing and high contrast photography for general industrial arts teacher. Prerequisite: 130-140. W

130-355 Line and Halftone Photography 2 Cr. High contrast photography in graphic reproduction processes; dealing with line, halftone, duo-tone, and special-effect film negatives and positives. Special course fee. Prerequisite: 130-140 or consent of instructor. F-W-S

130-359 Image Assembly and Platemaking 2 Cr. Pre-press operations and systems. Imposition, film assembly, contacting, proofing, offset platemaking and auto-

mated pre-press systems. Special course fee. Prerequisite: 130-140.

130-366 Image Transfer 3 Cr. Preparation of image carriers and printing on paper and other substrates; lithography, flexography, gravure, screen printing, electrostatics, and associated procedures for transferring images from film to substrate; reproducing line and half-tone copy in one or more colors; image/film assembly, step and repeat, multiple page imposition, platemaking, press systems, densitometry, ink, paper problems and quality control. Special course fee. Prerequisite: 130-140 or consent of instructor. F-W

130-370 General Binding 2 Cr. Finishing, fastening, and covering printed materials: mechanical, loose-leaf, wire staple, sewn and perfect binding. Special course fee. Prerequisite: 130-140 or consent of instructor. F-W-S

130-414 Technical Illustration 1-3 Cr. The presentation of a highly organized approach to learning technical pictorial drawings. Emphasis is on isometric views, inking techniques, and preparation of original art to final product. Prerequisite: 130-212. F-W-S

130-424 Architectural Technology 3 Cr. Space programming and planning, working drawings for commercial and industrial buildings. Building codes, energy requirements, construction contract documents, structural materials and systems, building materials and systems. Prerequisite: 130-110 or 130-120. F-W

130-433 Tool and Die Design 2 Cr. Design and application of jigs and fixtures, selection of tooling materials, tolerancing gauges for checking work, stamping die design and mold design. Prerequisites: 130-311 and 372-325. F

130-475 Printing Economics 3 Cr. Estimating production costs, specification of equipment, production scheduling, facility planning, materials inventory and control, and systems that expedite graphic reproductions. Prerequisite: 130-140. F-W

130-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W-S

130-504 Communications and Information Systems 1-3 Cr. Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information. Special course fee. Prerequisite: 130-103. F-W-S

130-505 Office Automation Technology 3 Cr. Automation information concepts and technology used in office including both communication, storage, and retrieval systems. Emphasis on cost effective selection and implementation problems. Prerequisite: 130-103 or Consent of instructor F-W-S

130-506 Introduction to Telephony 2 Cr. Principles of current technologies, systems, and trends in telephone communication systems design and applications. Special course fee. F-W-S

130-507 Artificial Intelligence Applications in Business 2 Cr. Artificial intelligence applications in business and industry with emphasis on office information system characteristics and implementation. Prerequisite: 130-505. F-W

130-509 Business Applications in Desktop Publishing 1-2 Cr. Office automation and information systems for generating business formats on a computer network. Computerized forms, summaries, and related graphics utilizing automated pagination software, and existing software systems print commands with laser printer characteristics. F-W-S

130-526 Building Construction Specifications 2 Cr. Construction specification organization and basic specification preparation skills; role of specifications in building process and relationship of specifications to other construction contract documents. F-W

130-527 Site Engineering 2 Cr. Use of surveying instruments, techniques and computation to measure and describe land configurations; construction surveying including contours, grades, cut and fill, and drainage; soil analysis. Special course fee. Prerequisites: 130-110 and trigonometry. F-W-S

130-528 Structural Design 3 Cr. Analysis, selection and delineation of concrete, steel and wood structural components and systems in buildings. Prerequisite: 130-291 or 372-325. F

130-532 Mechanical Design 4 Cr. Analysis and design of machine elements: gearing, shafting and friction devices. Prerequisites: 130-230 or 130-593, 372-325 or 130-291, 355-153 or 355-156. W

130-537 Mechanical Design Drafting 2 Cr. Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings. Prerequisite: 130-311. F

130-543 Graphic Arts Production Techniques 2 Cr. The study of techniques associated with the production of two-dimensional printed media, with emphasis on design, production and evaluation, also including client and printer relationships. Prerequisite: 130-366. F-W-S

130-545 Publications Production 1 Cr. Principles of designing, printing and distributing publications for business, education and industry. Prerequisite: 130-140. Repeatable for credit. F-W-S

130-557 Color Separation 2 Cr. Color separation from reflected and transmission copy; filters and densitometry; direct and indirect photographic color separation methods. Special course fee. Prerequisite: 130-355 or consent of instructor. W

130-561 Screen Printing .5-2.0 Cr. Screen printing technology-applications, components and techniques. Survey of various materials and equipment used in screen printing. Production of screen printed products. Special course fee. Prerequisites: 130-140 or 214-592 or 304-518, the above courses OR consent of the instructor is required. F-W

130-592 Mechanics of Machinery I 3 Cr. Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration. Prerequisites: 130-290 and 355-154. W

130-593 Mechanics of Machinery II 3 Cr. Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces. Prerequisite: 130-592. F

130-595 Seminar 1-2 Cr. (Title will reflect specific graphic and industrial communication content). Current and projected communication methods, concepts, technologies and innovations in graphic communications. S

130-629 Land Use Planning 3 Cr. Area planning; problems in design of building complexes; exterior space, land use, relationships between buildings and supporting facilities; contemporary regional and city planning and its historical roots. Prerequisite: 130-325. F-W

130-636 Computer Assisted Design Problems 2 Cr. Computers in drafting and plotted design, design automation, mechanical design problem analysis for computers, mathematical and simulation models. Prerequisites: 130-230 and 354-141. W

140-271 Safety Principles and Practices 3 Cr. Principles of accident prevention; school safety programs; identification of resources and content: motor vehicle, home, public, farm, industrial, school, recreational and civil defense. FE

140-375 Driver and Traffic Safety 3 Cr. Classroom phase of driver education: curriculum selection and use, instructional resources and materials, and driver education administration. FO

140-377 Driver Education Laboratory Methods and Techniques 3 Cr. Role, aims and objectives of laboratory programs in driver and traffic safety education; multiple-student teaching techniques, simulation on-street behind-the-wheel and multiple-car driving range experiences provided. SO

140-574 Alcohol, Drugs and Accident Prevention 2-3 Cr. Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers. SO

140-575 Behavioral Approach to Accident Prevention 2-3 Cr. Behavioral aspects of accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior. SE

140-580 Driver Education for the Handicapped 2-3 Cr. Curriculum content, instructional methods and techniques, legal implications, driving aids and financial assistance; lab work in teaching handicapped people to drive. S

140-581 Occupational Safety/Loss Control 2-3 Cr. Overview of occupational accident prevention programs: techniques of measurement, cost of accidents, locating and identifying accident sources and problems of selecting corrective action. Prerequisite: junior standing. F-W-S

140-583 Voluntary OSHA Compliance 2-3 Cr. Implications of Federal Occupational Safety and Health Act of 1970 on industrial operations, systematic self-inspection and compliance procedures. F-S

140-584 Safety Engineering Standards 2 Cr. Analysis of legal and voluntary industrial workplace standards and regulations. F

140-586 Fire Protection/Prevention 3 Cr. Behavior of fire: chemistry, protection, prevention and control. W

140-587 Human Factors Engineering 3 Cr. Man's physiological and psychological abilities in man/machine interface, working performance, reliability, comfort and safety; effective design of man and work environment as a cybernetic system. Prerequisites: 479-110, 354-130 or consent of instructor. F

140-588 Construction Safety 2 Cr. Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems. F-W

140-589 Fleet Safety Management 2 Cr. Controlling loss associated with motor fleet operations: selection, training and supervision of commercial drivers; regulatory controls. W

140-590 Product/Service Liability 2 Cr. An analysis of products liability losses, laws and controls. W

INDUSTRIAL MANAGEMENT

150-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairman. F-W-S

150-X97 Field Experience 1 Cr. F-W-S

150-X98 Field Experience 2 Cr. Off-campus work and study in an approved position to better understand business and industrial concepts and practices. F-W-S

150-150 Industrial Organization 2 Cr. Basic functions and interrelationships of major subdivisions of industrial organizations. Prerequisite: Industrial Technology major or instructor consent. F-W

150-200 Production/Operations Management 3 Cr. A broad analytical "systems" viewpoint is used to develop competency in management decision-making and problem solving in an operations setting. F-W-S

150-220 Quality Control for Service Industries 3 Cr. Method, procedures and administration of quality technologies for business and service industries. Analysis, documentation of standards and applied research.

150-304 Principles of Business Management 3 Cr. Basic managerial functions: planning, organizing, staffing, directing and controlling; management principles with universal applications; nature of authority and responsibility, departmentation, line and staff relations; enterprise manager in his social setting, comparative management; and management and the future. F-W-S

150-450 Maintenance Management 2 Cr. Organization and management of facilities management system: administration of maintenance forces, maintenance of personnel, planning and scheduling of work, maintenance of basic environmental systems, project control and cost control for maintenance operations. F-W-S

160-231 Fundamentals of Industrial Marketing 2 Cr. An examination of the industrial marketing place. Emphasis is placed upon understanding the unique characteristics of the industrial marketing environment and developing an understanding of how these characteristics are integrated into an industrial marketing program. Prerequisites: 320-201 or 320-210 and sophomore standing.

160-232 Fundamentals of Marketing 2 Cr. Overview of basic functions of marketing, including product development, promotion, distribution, market research and pricing. Not available for students who have completed 160-330. Prerequisite: 320-201 or 320-210. F-W-S

160-260 Introduction to International Business 3 Cr. Introduction to the interaction of foreign business, politics, culture, societies on basic international business systems. Basic terminology of International Business is of primary importance. Prerequisite: sophomore standing F-W-S

160-310 Management Information Systems 2 Cr. Improving the practice of management through the design and utilization of management information systems. An information system aids management in making, carrying out, and controlling decisions. Prerequisite: 150-200 or 160-304. F-W

160-312 Cost Accounting 3 Cr. Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting. Prerequisite: 160-207. F-W

160-318 Business Law I 3 Cr. Introduction to law, contracts, agency nature and types of negotiable instruments. Prerequisite: junior standing. F-W-S

160-319 Business Law II 3 Cr. A continuation of Business Law I; includes security devices, insurance, agency, employment, partnerships, corporations, real property, estates and bankruptcy, government and business; a study of the effect of the Uniform Commercial Code on the above-mentioned areas of business law. Prerequisite: 160-318. S

160-320 Income Tax Accounting 3 Cr. Principles for determining taxable net income; computation of federal and state income taxes for individuals, partnerships and corporations. Prerequisite: 160-206.

160-323 Retail Merchandising and Management 3 Cr. Retail sales promotional techniques: display, layout, retail and cooperative advertising, mathematics of merchandising. Retail management problems: store location, types of goods stocked, inventory financing, credit operation. Prerequisite: 160-330. F

160-330 Principles of Marketing 3 Cr. Retail, wholesale, advertising, channels of distribution, cooperative marketing, pricing, marketing research and marketing legislation from consumer's, middleman's and manufacturer's standpoint. Prerequisite: 320-201 or 320-210. F-W-S

160-334 Salesmanship and Sales Management 3 Cr. Concepts of selling: locating prospects, securing and conducting sales presentations, analyzing and handling different types of customers, closing sale, maintaining goodwill. Sales organizations: recruitment, selection, training, compensation and cost control methods. Prerequisite: 160-330. F-W-S

160-335 Accounting for Management Decisions 3 Cr. Interpretation of financial statements, internal control, budgeting, costing of products manufactured and sold, analysis of cost-volume-profit decisions. Data presented without mechanical techniques. Prerequisite: 160-207. F-W

160-336 Industrial Marketing Management 3 Cr. Examination of the industrial marketing place with emphasis on unique characteristics of the industrial marketing environment. Special emphasis on case study analysis and discussion. Prerequisite: 160-330. F

160-337 Purchasing 3 Cr. Exploration of decision making process used in purchasing goods and services; procurement process, paper flow, economics of purchasing and legal aspects. Prerequisites: 150-200 and 160-330.

160-340 Business Finance 3 Cr. Principles of planning, raising and controlling short- and long-term funds for large or small corporate or non-corporate business enterprises; financial aspects of promotion and organization, sources of financing and administration of income; failure and reorganization. Prerequisite: 160-207. F-W-S

160-355 Principles of Risk Management 3 Cr. An overview of the role of management of risks in business with emphasis on identification of risks and evaluation to determine methods of handling them. We will consider all methods with emphasis on insurance. Prerequisite: junior standing. F

160-365 Principles of Real Estate 2 Cr. Real estate law, importance of real estate, nature of real property, interests in real estate, historical background, estates, how created, types of ownership, descriptions, real estate contracts, transfer of title, title records, lease and zoning.

160-370 Principles of Advertising 3 Cr. Psychological, social and economic aspects of advertising in relationship to other aspects of distribution and its place in modern business. Prerequisite: 160-330 or consent of instructor. F-W-S

160-410 Manufacturing Cost Analysis 3 Cr. Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting for a manufacturer. Prerequisite: 160-206 or 160-400. F-W

160-438 Industrial Distribution 3 Cr. Industrial distribution channels and strategies involved in determining specific channel objectives; channel structure; procedures regarding physical distribution of goods through selected channels; control and evaluation of the adopted channels. Prerequisite: 160-336.

160-461 Business Practicum/Management 3 Cr. Approved management position in Campus Industries to better understand how major elements of management function and interrelate. Prerequisites: 160-331 or 160-341 or 160-351 and senior standing.

160-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W-S

160-520 Seminar 1-3 Cr. Current topics in business. (Title will reflect specific business content).

160-573 Legal Aspects of Construction 3 Cr. Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker. F

160-585 International Marketing 3 Cr. Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms. Prerequisite: 160-330.

160-601 Legal Environment of Business 2 Cr. Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control. F-W

160-679 Marketing Research 3 Cr. Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. Prerequisites: 160-330 and 320-325. F-W

160-690 Administrative and Business Policies 3 Cr. Integrates previous business studies, develops ability to solve business problems through scientific approach to decision-making. Business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel and public relations functions. Prerequisites: 160-330 and 160-340 and senior standing. F-W

MATERIALS AND PROCESSES

170-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

170-101 Processes—Concepts 3 Cr. Concepts and applications of industrial processes: forming, shaping, molding, casting, joining and finishing of common materials. F-W

170-102 Manufacturing Materials and Processes I 3 Cr. Material properties (metals, plastics, elastomers, wood and composites). Experiences in machining and forming processes such as turning, milling, shearing, drawing, electrical discharge machining, injection molding, extrusion, thermoforming, laminating, reaction injection molding. New developments and trends in materials and processing. F-W

170-103 Manufacturing Materials and Processes II 3 Cr. Common materials used to manufacture products; experiences related to producing metal products by welding, forging, casting and powdered metal molding; application of finishing materials; molding products from ceramic materials; and fastening with adhesives and mechanical fasteners. New developments and trends in materials and processing. Prerequisite: 170-102. F-W

170-105 Basic Robotic and Automated Systems Application 3 Cr. Introduction to broad applications of robotic and automated systems including historical developments. Recent innovative uses of robots, vision systems, processing automation, programmable controllers, and computer numerical controlled devices. Tailored to students seeking a broad introduction to automated systems rather than a specialized in-depth technical approach. Will not serve as a prerequisite for 170 505 Robotics. F-W

170-202 Metals 2 Cr. Introduction to metals in machining, welding, casting and metal forming: fundamental operations and related technical information. F-W

170-205 Design for Industry 3 Cr. Industrial Research and Development experiences focusing on problems related to product development, innovation and problem solving, manual, semi-automatic and automatic production processes. Development and application of various systems for selection of materials and processing will be studied. Prerequisite: 170-101. F-W

170-209 General Finishing 2 Cr. Technical information and application of finishes to various materials. Color theory, spraying, baking, drying, polishing, spot finishing, and re-finishing. Prerequisite: 170-101 or 170-202.

170-210 Materials of Industry 3 Cr. Characteristics and processing requirements of common industrial materials; material properties, property modification, processing characteristics and testing criteria of the four material families; material identification, selection, utilization and testing (intended for General Business Administration students). F-W

170-222 Industrial Ceramics 3 Cr. Glasses, construction materials, abrasives, whitewares, refractories, enamels, electronic and nuclear products. Lab work to correlate applications, material properties and production methods. Prerequisite: 311-115 or 311-135. F

170-230 Metal Machining Technology 3 Cr. Basic machine tool concepts providing an operational knowledge of the lathe, milling machine, grinder, drill press and electrical discharge machine (EDM). Introduction to precision measurement techniques and instruments. Prerequisite: 170-101 or 170-202. F-W

170-241 Machine Woodworking 2 Cr. Wood industry materials and equipment; job planning, organizing and preparation; principles of wood and allied material processing. Prerequisite: 170-101. F-W

170-250 Plastics I 2 Cr. Plastics industry materials and processes; characteristics and properties of thermoplastic and thermosetting materials and processing equipment. Prerequisite: 170-101 or 170-202. F-W

170-270 Light Building Construction 2 Cr. Residential and small commercial structure construction: terminology, materials, tools and equipment. Prerequisite: 170-101 or 170-202. F-W

170-275 Construction Materials 2 Cr. A study of the origin, composition, and basic nature of primary materials of construction (woods, metals, plastics, brick, tile, rock, stone, cement, and glass). Secondly, the selection, specifying, and recommended application procedures of materials with respect to standards and codes. F-W

170-280 Packaging Fundamentals 2 Cr. Relationship to marketing and consumer behavior, control through legal and industrial regulations, function within larger organization, roles of professional engineer, packages and their function. F-W

170-301 Technology, Resources, Environment 2 Cr. Relationship between rate of resource use and environmental degradation; possible consequences of present resource consumption patterns; pursuit of ecologically sound resource consumption patterns more appropriate to presently known available resources. F-W

170-304 Industrial Crafts 2 Cr. Craft industries: tools, processes, products from leather, fiber, metal, plastics, glass, plaster, ceramics, and wood materials. Lab work. F-W

170-313 Wood Technology 3 Cr. Forest management; wood structure, properties, defects, modifying and bonding; testing procedures and trends in wood-based industries. Prerequisite: 170-101. F-W

170-315 Packaging Materials 3 Cr. Origin, composition, properties and application of packaging materials; lab work in packaging and materials testing methods. Prerequisite: 170-280. F-W

170-320 Production Sheet Metal 3 Cr. Forming characteristics of various metal sheets. Conventional and high technology cutting, bending, forming, and joining processes and equipment. Prerequisite: 170-102. F-W-S

170-321 Production Finishing Systems 3 Cr. Selection and management of production finishing systems for manufactured goods. Paint types, properties, methods of application and testing procedures. Systems for applying metallic coatings and other non-organic finishes. Prerequisite: 170-103. F-W-S

170-331 Machine Shop II 2 Cr. Advanced shop practice; sharpening of lathe tools, twist drills, milling cutters, taper turning, grinding externally and on flat surfaces. Gear cutting on milling machine. Heat treating and layout techniques. Prerequisite: 170-230 or consent of instructor. F-W

170-333 Machine Shop III 2 Cr. Spiral milling, tool making, and cutter grinding, cylindrical grinding, maintenance. Prerequisite: 170-331 or consent of instructor. F-W

170-344 Cabinet Work 2 Cr. Problem solving, materials testing and advanced technical information; major cabinetmaking project. Prerequisite: 170-241. F-W

170-346 General Woodworking 2 Cr. General unit shop organization, upholstery and wood turning; organizing and presenting content in woodworking as it relates to total Industrial Arts program. Prerequisite: 170-101. W

170-357 Metal Casting Processes 3 Cr. Development of selected metal casting processes through design, pattern construction and casting. Select casting processes for production applications. The role of computers and robots as tools of the casting industry. Visual and metallurgical analysis of castings. Prerequisite: 170-103 or instructor's approval F-W

170-365 Production Welding Technology 3 Cr. Fundamental concepts of welding and cutting processes. Set-up and/or operational knowledge of common welding and cutting processes. Metallurgical effects of welding on metals and tests for welds. Operational knowledge of robots in welding, welding codes and symbols. Prerequisite: 170-103 or instructor's approval F-W

170-370 Commercial Building 2 Cr. Structural building systems and related mechanical installations. Prerequisite: 170-270. F-W

170-372 Heating and Air Conditioning 3 Cr. Heating, heat energy, heating systems, calculation of heating loads, heating drawings, burners and control systems. W

170-373 Concrete Technology 3 Cr. The principles of cement and concrete (ingredients, mixing, placement, finishing, curing, properties, and applications). Prerequisite: 170-270. F-W

170-380 Consumer Packaging Systems 3 Cr. The study of packaging from the design concept through production. Lab work on structural design, sample making, and machine operation. Discussions on standard packages and their applications. Prerequisite: 170-280. F-W

170-381 Distribution Packaging 3 Cr. Packaging systems to support the distribution functions. Topics will include shipping containers, palletizing, unitizing, barrier problems, marking and coding for shipment, freight regulations, military specifications and hazardous materials regulations. Prerequisites: 170-280, 170-315, 170-380. F-W

170-385 Packaging Machinery 3 Cr. Equipment that measures, forms, fills, seals, cartons, cases, uncases and labels; functional capabilities of speed, material characteristics, carton size and operating characteristics. W

170-401 Solid Waste Technology 3 Cr. Solid wastes and processing technology; recovering some economic benefits.

170-480 Packaging Design and Evaluation 3 Cr. Chemical and physical protection problems; materials, structure, graphics and regulations in package design; shock and vibration forces in package evaluation; practical applications of evaluation using electronic instrumentation. Prerequisite: 170-380. F-W

170-489 Business and Industrial Internship 2-8 Cr. Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Prerequisite: junior standing or consent of department. F-W

170-502 Engineering Data Bases for Manufacturing 3 Cr. Classification and coding, and formation of a Group Technology system. Modification of existing software for Computer Aided Process Planning to serve specific needs. Information storage and retrieval systems. Development of Computer Integrated Manufacturing data bases. Technical and human factors affecting workers. Prerequisite: 170-504 or 150-510 or consent of instructor F-W-S

170-504 Computer Aided Manufacturing 3 Cr. Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation. Special course fee. Prerequisites: 170-101, 170-202 and 354-141 or consent of instructor. F-W

170-505 Robotics 2 Cr. Capabilities of and justification for industrial robots; lab work with robots and simulators in processing, assembly and materials handling. Special course fee. Prerequisites: 170-101 or 170-202 and 170-504 and 354-141 or consent of instructor. F-W

170-506 Maintenance of Processing Equipment 3 Cr. Recondition, identify and correct common malfunctions of hand and power woodworking and metalworking equipment; manufacturers' performance specifications, cutting tool specifications and preventive maintenance schedules; selection of hand tools, power equipment, measuring instruments and safety devices. F-W

170-508 Industrial Metrology 3 Cr. Measurement of heat, moisture, speed, fluid flow, material properties, and angular and linear dimensions for parts production and process control. Theory and application with major emphasis on dimensional metrology. Introduction to statistical process control and nondestructive testing. Prerequisites: 170-102, junior standing or consent of instructor F-W-S

170-510 Manufacturing Systems 3 Cr. Dedicated, flexible, and standard manufacturing systems. Selection and application of standard production components and tooling to produce and evaluate a given product. Emphasis on integrated inspection, part transfer, production, and robot application. Special course fee. Prerequisite: 170-504.

170-511 Production and Transfer Tooling 3 Cr. Tooling for machining, locating, and transferring multiple parts for fixed and flexible manufacturing. Set-up and development of tooling for robots, Computer Numerical Control (CNC) machines and other production equipment. Transfer line tooling. Prerequisite: 170-504. F-W-S

170-513 Manufacturing Processes: Wood Products 3 Cr. Primary and secondary manufacturing processes including machining theory, computerized planning systems, Numerical Control (NC) machining applications, optically controlled laser engraving/cutting, product development and production systems. Prerequisite: 170-313. F-W-S

170-515 Metallurgy 3 Cr. Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. Prerequisite: 311-115. F-W

170-537 Numerical Control in Manufacturing 1-3 Cr. Investigation and justification of numerical control of machine tools; types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting; working knowledge of basic machining processes recommended. Special course fee. Prerequisite: 170-101 or 170-202. F-W

170-560 Aircraft Construction Workshop 1-3 Cr. Thorough study of proved plans precedes completion of assignments in fabrication of parts, assembly, rigging, powering and finishing full-scale aircraft. Prerequisite: consent of instructor or degree in Industrial Education. S

170-565 Welding II 2 Cr. Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. Prerequisite: 170-365. W

170-570 Mechanical Systems 2 Cr. Plumbing and electrical requirements for residential and commercial buildings. Prerequisite: 170-370. W

170-575 Building Construction Practicum 2-4 Cr. Technical information, construction problems and actual development of light residential structure. Prerequisite: 170-270. S

170-580 Packaging Development 3 Cr. Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer. Prerequisite: 170-480. F-W

170-585 Packaging Seminar 2 Cr. Current packaging problems or developments (subject based on students' interests and current issues). Prerequisite: junior or senior standing in Packaging. F-W

170-595 Seminar 1-2 Cr. (Title will reflect specific materials and processes content.) Designed to upgrade effectiveness of teachers or secondary school materials and processes content.

170-620 Research and Development 2 Cr. Research and development procedures applied to specific industrial material and processing problems. Prerequisite: Sr. or Grad status F-W

170-621 Research and Development Laboratory 1 Cr. This lab is taken in conjunction with 170-620 to allow students in technical majors to fulfill the requirements of the major R&D project. Prerequisite: Sr. or Grad Status To be taken concurrently with 170-620 F-W

INDUSTRIAL TEACHER EDUCATION

190-X49 Cooperative Education Experience 3-8 Cr. Work and study in an approved position to gain business/ industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. "X" may be "2", "3", or "4". Prerequisite: consent of instructor or department chairperson. F-W-S

190-160 Introduction to Technology Education 2 Cr. An introduction to current programs, facilities and opportunities in teaching industrial arts, vocational, technical and adult education. Students develop personal goals, complete program plan sheets, visit schools and work as teacher aides. F-W

190-205 Teaching Methods Technology/Vocational Education 2 Cr. Study of teaching methods in use in youth and adult shop classes. Instruction planning; lesson presentation with video tape equipment; methods of organization and management; instruction aids; professional ethics. Prerequisite: 190-160. F-W-S

190-390 Lab/Class Management in Technology Education 2 Cr. An overview of principles of facility planning and equipment selection for a variety of curriculum needs. Laboratory and classroom management techniques will be presented with an emphasis on safety requirements and managing various delivery systems used in contemporary programs. Prerequisite: 190-160. F-W-S

190-403 Student Teaching Elementary Technology Education 2 Cr. Directed teaching at the elementary level in selected off-campus schools. Prerequisites: 190-160, 190-205, 190-405, 190-406.

190-405 Curriculum Technology/Vocational Education 2 Cr. Study of curriculum terminology and methods of selecting and organizing content for industrial education courses. A course of study and individualized instruction will be developed by the student for use in teaching a class in industrial arts or vocational education. Prerequisites: 190-160 and 190-205. F-W-S

190-406 Evaluation in Technology/Vocational Education 2 Cr. For industrial arts and vocational/technical teachers in evaluating program and student performance: basis for student assessment, evaluation of manipulative activity and construction of teacher-made tests as applied to all students (including those with special needs). Student evaluation of instructor and instruction. Prerequisites: 190-205 and 190-404. F-W-S

190-407 Student Teaching in Technology Education 5 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisite: Must hold teaching certificate in an area other than Industrial Education.

190-408 Student Teaching Technology/Vocational Education 8 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisites: 190-404 and overall G.P.A. of 2.25; satisfactory health, speech and English. F-W

190-409 Student Teaching 6.0 Cr. Directed teaching and community experiences in selected off campus schools. Prerequisites: 190-160, 190-205, 190-405, 190-406, Satisfactory Health and Speech, English, and grade point average. F-W-S

190-488 Internship Teaching 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisite: 190-404. F-W

190-520 Seminar: 1-3 Cr. Current topics in industrial/technology education. Prerequisite: consent of instructor.

190-530 Implementing Technology Education 3 Cr. Converts the theory of Contemporary Technology Education programs into instructional materials, facilities, and strategy suited to the secondary and post-secondary school. F-W-S

190-533 Planning & Equipment for Technical Laboratories 2 Cr. School shop facility planning: equipment selection, placement, care and management. Prerequisite: 190-405, or equivalent.

190-540 Middle School Technology Education 1 Cr. Reviews trends and activities in the technology education movement. To update instructors to teach middle school offerings. F-W-S

190-575 Workshop: 1-3 Cr. Current specialized topics in industrial education through experiential activities. Prerequisite: consent of instructor.

190-606 Activities in Technology/Vocational Education 2 Cr. A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

190-631 Field Trips to Industry 1-3 Cr. Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught.

190-637 Organization/Management of Technical Laboratories 2 Cr. Experience in administration, project development and teaching problems associated with industrial education. Prerequisite: 190-205. S

190-638 Course Construction 2 Cr. Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package and/or unit of instruction. W-S

195-300 Technology 3 Cr. Development, levels, types, processes, influences and control of technology; significance of technology in students' lives and its effect on decision-making processes in technological society. F-S

195-500 Evolution of Technology 2 Cr. Contemporary technology: how things got to where they are, and where they might go from here. Relationships between mechanical and social inventions and technology's role in human and institutional behavior.

195-520 Technological Advances—Fast Forward I 2 Cr. Outlines industry's rapid advancements in high technology as utilized in the world today. Reference is made to a variety of applications of this technology now and in the future. F-S

195-521 Technological Advances—Fast Forward II 2 Cr. Current applications of technology in today's society. Discusses how technological advances have affected educators through simulation, society through technological changes such as storing information, television communication and other new technological advances. W-S

195-532 Futures of Technology 2 Cr. Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer. F

195-540 Future of Work 1-2 Cr. Future possibilities as to why people work, who will work, and in what conditions. Project probable work parameters from current trends. Relate past, present and future to students' individual work situations.

MARKETING EDUCATION

196-201 Introduction to Marketing Education 3 Cr. The field of distributive education; historical development, role in vocational education, career opportunities, certification requirements, and current trends. F-S

196-202 Supervision of Distributive Education Clubs 3 Cr. Organization of a DECA chapter, the administration of activities, and the design of competitive events, including "Program of Work" development, school and model store organization, and integration of DECA into the curriculum. Prerequisite: 416-201. F

196-301 Marketing Education Methods 4 Cr. Methods and materials of distributive education: projects, individualized instruction, programmed instruction, demonstration, instructional resource materials, and laboratory equipment. Prerequisite: 416-201. S

196-401 Marketing Education Curriculum 3 Cr. Developing distributive education curriculum for secondary and post-secondary programs. Prerequisite: 416-301. S

196-408 Student Teaching—Distributive Education 8 Cr. Directed teaching and community experiences in selected off-campus schools (quarter). Prerequisites: 416-201, 416-301, 416-401, 469-560. S

196-409 Marketing Education - Student Teaching 6.0 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisites: 196-201, 196-202, 196-301, 196-401, 196-501, Senior standing - cumulative GPA 2.5; Consent of instructor. Satisfactory health, speech, and English W

196-501 Marketing Education Project Method 3 Cr. Designed to develop methods, techniques, questions, activities and resources that center around teaching distributive education via the project method or model store simulation. Prerequisite: 416-201. F

196-555 Marketing Education Seminar 2-3 Cr. Designed to update marketing and distributive education undergraduates and graduates (teacher-coordinators) on work experience, new curriculum, student organization competencies, coordination techniques, special needs, and Distributive Education related projects. Will be used to inservice high school teacher-coordinators and VTAE marketing teachers.

INDUSTRIAL TRAINING

198-550 Introduction to Industrial Training 2 Cr. Philosophy, career opportunities, status of training programs, curriculum and program development, methods and evaluation, overview of facilities. F-W-S

198-560 Training Systems in Business and Industry 3 Cr. Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors. S

198-589 Training Internship 2-8 Cr. Opportunities for students to learn and practice training management and instructional techniques through activities and experiences in a training department. Objectives commensurate with student's background and field of training. Activities include designing and implementing training programs in student's major or minor field of study in either industry, business, military or government training programs. Prerequisites: 198-550 or 198-560, GPA 2.5 consent of specialization director F-W

199-488 Vocational, Technical and Adult Education Internship 1-8 Cr. International students majoring in Vocational, Technical and Adult Education will participate in an internship located in both industrial/business and vocational/technical institutions to have experience in their technical specialty. Prerequisites: 190-205, 190-405, 190-406, 199-502, 199-534. F-W-S

VOCATIONAL EDUCATION

199-501 Pre-Service Workshop for Vocational Educators 1 Cr. Introduction to the basic concepts of teaching courses in Wisconsin VTAE schools.

199-502 Principles of Vocational/Technical/Adult Education 2 Cr. Philosophy, organization and administration of vocational, technical and adult education, nationwide, in Wisconsin and on the local level. F-W-S

199-534 Task Analysis 2 Cr. Analysis techniques utilized in curriculum development. Emphasis on task analyses and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs. F-S

199-537 Competency Based Education—Vocational/Industrial 2 Cr. Competencies for VTAE programs and courses. Development of CBE performance indicators in all domains, a CBE management system, and basis for CBE evaluation.

199-541 Computer Generated Curriculum—Decal 2 Cr. Introduction to DECAL (Digital Equipment Corporation Author Language) programming and its inter-relationship to curriculum. DECAL program writing and editing for lessons and quizzes. Use of related student report files.

199-546 Seminar 1-3 Cr. Current topics in vocational, technical and adult education with application for personnel in the field. Prerequisite: consent of instructor.

199-560 Cooperative Occupational Education Programs 2 Cr. Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. Prerequisite: 469-502. F-W-S

199-580 Computer Aided Instruction-Vocational/Technical/Adult Education 2 Cr. Applications of the computer in managing vocational, technical and adult education classrooms and laboratories. Utilization of computers in course preparation, evaluation and methods of teaching. Use of existing software and the evaluation of it. Prerequisite: consent of instructor or computer literacy course.

199-585 Computer Applications in Vocational Education 2 Cr. Presentation of the importance and general applications of computers in the area of vocational education. Prerequisite: computer literate approval of instructor F-W-S

199-590 Vocational Education: Economic Development Role 2 Cr. The role of the Wisconsin VTAE system in response to rapidly changing technology and the economic climate in Wisconsin.

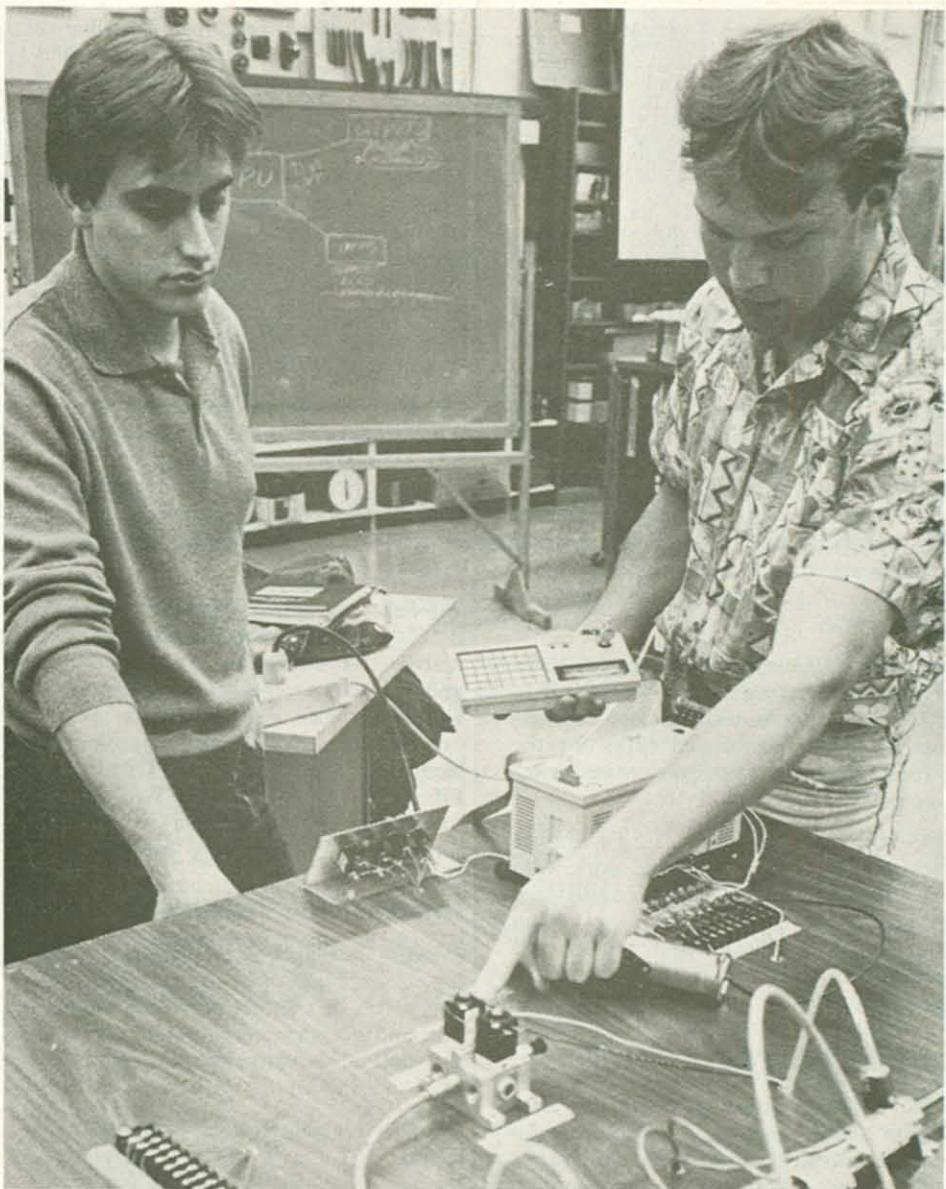
199-605 Methods of Teaching Vocational Education 2 Cr. Competency-based and individualized approach to methods of teaching vocational education. F

199-611 Individualized Instruction in Practical Arts and Vocational Education 2 Cr. Individualizing instruction as an alternative to conventional methods, organization and evaluation of teaching; especially helpful to teachers in vocational education and practical arts.

199-638 Course Construction for Vocational Educators 2 Cr. Competency-based and individualized approach to principles of course construction for vocational educators. F

199-640 Instructional Evaluation in Vocational Education 2 Cr. Competency-based and individualized approach to instructional evaluation for vocational educators. F

199-674 Adult Education 2 Cr. Philosophy and history of adult education in the U.S. Techniques for teaching adults: psychological factors, methods, adult interests and characteristics.



HOME ECONOMICS

INTERDEPARTMENTAL

200-295 Career Exploration in Home Economics 1 Cr. Career expectations and developmental needs of individuals and organizations/institutions in home economics. F-W-S

200-325 Computer Applications in Home Economics 2 Cr. Microcomputer applications in home economics. Analysis of appropriate data bases. Evaluation of home economics software. Hardware selection criteria appropriate to home economics applications. Comparison of mainframe and microcomputer appropriate applications. Prediction of future applications. Repeatable for various subunits. Prerequisite: 300-101 or consent of instructor.

200-395 Issues in Home Economics 1-2 Cr. Home economics issues encountered in pursuit of improved quality of life.

200-449 Cooperative Education Program in Home Economics 3-6 Cr. Work and study in an approved business/industry position related to the student's major. Selection by application and interview. Prerequisite: consent of instructor or field experience. Repeatable for credit. F-W-S

200-681 Problems in Home Economics 2 Cr. Course will deal with special problems in depth as initiated by an instructor or according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. Prerequisite: consent of instructor.

HUMAN DEVELOPMENT AND FAMILY LIVING

212-100 Introduction to Early Childhood Programs 1 Cr. History, types of programs and staff requirements in early childhood professions. F-W

212-101 Introduction to Child Development and Family Life 1 Cr. Fields of child development and family relationships as an intrinsic part of home economics; occupational opportunities in programs serving families and children. F-W

212-115 Introduction to Home Economics in Business 1 Cr. Introduction to Home Economics in Business with emphasis on history of field, professional development, and personal qualities needed in various positions. F-W-S

212-124 Child Development I 3 Cr. Developmental study of the child from conception through adolescence: physical, intellectual, social and emotional growth; observation required. F-W

212-160 Children's Health and Safety 1-2 Cr. Providing for young children's health and safety.

212-163 Adult/Child Interaction 1-2 Cr. Organizing and sustaining positive functioning of children and adults in learning environment. F-W

212-168 Fostering Language Development in Young Children 3 Cr. Methods and techniques of fostering language development in young children. F-W

212-235 Child Development Laboratory 1 Cr. Observation and/or participation in early childhood program. May be repeated for different experiences. Prerequisite: 212-124. Repeatable for credit. F-W

212-250 Individual and Family Relations 3 Cr. Dynamics of social-psychological forces affecting family interaction. Explorations of courtship, husband-wife, parent-child relationships. F-W

212-251 Early Years of Marriage 1 Cr. Presentation and evaluation of adjustments, goals and processes of the early years of marriage. F-W-S

212-264 Child Guidance 2-3 Cr. Principles of child guidance; evaluation of literature and application of studies to children; observation of young children. F-W

212-265 Child Guidance Practicum 1 Cr. Supervised participation in Child and Family Study Center or similar center: guidance techniques and understanding of children. Prerequisite: 212-264. F-W-S

212-274 Creative Activities for Young Children 2 Cr. Curriculum, methods and materials for music, art and creative movement activities for young children. Prerequisite: 212-124 or 212-264. F-W

212-294 Teaching/Learning Strategies in Early Childhood 5 Cr. Program management, classroom arrangement, guidance principles, sensory stimulation, enhancement of self and creative expression with young children. Prerequisites: 212-124 and 212-264. F-W

212-303 Language Arts and Social Science—Early Childhood 2 Cr. Development of methods and techniques for teaching language arts and social studies to young children: effective social and communication skills and experiences. Prerequisite: 212-204. F-W

212-344 Science, Mathematics and Social Studies—Early Childhood Education 4 Cr. Directed study of application of skills for teaching mathematics and science concepts to young children: organization and presentation of teaching/learning experiences for children in early learning situations. Prerequisite: 212-204. F-W

212-350 Dynamics of Family Development 3 Cr. A study of the family with emphasis on environmental factors significant in marriage and family relationships. Prerequisite: 212-250. F-W

212-351 Death and the Family 1 Cr. Current literature concerning how families deal with the death of a member; how adults can help children cope with death in the family, how other family members deal with death of older and younger family members. F-W

212-352 Parenthood 1 Cr. Presentation and evaluation of current knowledge about parenthood; effects of parenthood on parents. F-W-S

212-354 Skill Training for Individual/Family Interventions 3 Cr. Concepts and skills in developing rapport, assessing goals and initiating change with children, parents, couples and families across the life span in professional settings. F

212-355 Lifespan Human Development 3 Cr. F-W

212-380 The Family in Later Life 1 Cr. Overview of theory and research on older couples and families along with issues and problems facing late-life families. Prerequisite: 212-250 or consent of instructor. W

212-401 Issues in Child Development and Family Life 1 Cr. Issues related to profession in the areas of Child Development and Family Studies. Prerequisite: in CDFL program. F

212-433 Language Arts/Reading—Early Childhood Education 3 Cr. Current philosophies, methodology and materials for teaching reading: readiness activities and beginning reading in early childhood. Prerequisite: 212-333. F-W

212-451 Divorce 1 Cr. Evaluation of divorce and trends as part of American family system. Prerequisite: 212-250. W

212-480A Student Teaching in Preschool Programs 4 Cr. Directed teaching and community experience in selected early childhood centers. Prerequisite: 212-333. F-W

212-480B Student Teaching in Kindergarten 4 Cr. Directed teaching and community experience in selected kindergartens. Prerequisite: 212-303. F-W

<p>212-490 Clinical Seminar in Preschool Programs .5 Cr. Seminar concurrent with student teaching in Child and Family Study Center or other preschool program. F-W</p>	<p>212-595 Infant/Toddler Programming 1-2 Cr. Designing and conducting infant-toddler group education programs. Development, programming principles, effective learning strategies, program models, staff/parent roles, research, and administrative issues. Prerequisite: junior standing. Repeatable for credit. S</p>	<p>212-651 Marriage and Family Therapy Seminar 3 Cr. Application of basic counseling techniques in premarital, marital, family and couples-group counseling; supervised by professional marriage and family counselor. Prerequisite: 212-650 or consent of instructor. W</p>
<p>212-491 Clinical Seminar in Kindergarten Education .5 Cr. Seminar concurrent with student teaching in kindergarten. F-W</p>	<p>212-598 American Study Tour in Child Development 2 Cr. Study tour of child development centers; discussions, lectures by leaders in field of child development. Prerequisite: consent of instructor. S</p>	<p>212-653 Relationship Communication Training 2 Cr. Communication theories and skills applied to marital, family and other intimate relationships. Application of communication skills to personal relationships and professional work.(Preferably, but not necessarily, have your premarital or marital partner with you). Prerequisite: consent of instructor. F</p>
<p>212-507 Parent Education/Involvement 2 Cr. Parent groups: training of leaders, survey of literature. Practicum with parent groups. Prerequisite: 212-264. F-W</p> <p>212-520 Theories of Early Childhood Education 2 Cr. Early childhood education: evolution, theories and principles of current programs, and development of individual philosophy. Prerequisite: 212-408A. F-W</p>	<p>212-601 Child and Family Law 3 Cr. Legal issues affecting children and families. Prerequisites: 212-250, 212-350 and junior standing. W</p>	<p>212-654 The Workplace and the Family 2 Cr. Linkages between families and workplace; corresponding consequences for individual family well-being and the workplace. Prerequisites: 212-124 and 212-250 or consent of instructor. W</p>
<p>212-524 Child Development II 3 Cr. Empirical study of physical, intellectual, social and emotional development of children. Prerequisites: 212-124 and 212-264. F-W</p> <p>212-530 Adulthood and the Family 3 Cr. Study of adults in the family context during the early and middle years. Prerequisites: 212-124, 212-324. W</p>	<p>212-607 Parent Counseling 2 Cr. Approaches and techniques for working with parents; observation and experience in childrearing problems parents face. Prerequisites: 212-124 and 212-264. W</p>	<p>212-655 Current Topics in Sexuality 1 Cr. Overview and evaluation of current research concerning human sexual behavior and attitudes. Prerequisite: 212-250. F-W-S</p>
<p>212-535 Seminar On Self-Growth 2 Cr. Theories of the self; exploration of aspects of self-development and actualization. Prerequisite: 212-350 or 212-524. F-W</p> <p>212-545 Exceptional Needs and Programming—Early Childhood 3 Cr. Program development and implementation for preschool mentally handicapped children. Prerequisite: consent of department. F-W</p>	<p>212-610 Family Impact Seminar 3 Cr. Content, methods and process of assessing impact of public policy on children and families. Prerequisites: 212-250, 212-350, 375-510 or consent of instructor. W</p>	<p>212-664 Special Topics in Early Childhood Curriculum 1-3 Cr. Philosophy and methodology of early childhood education: problems confronting teachers. Prerequisite: 212-303. Repeatable for credit. F-S</p>
<p>212-553 Dual Career Families 1 Cr. The dual career marriage as a form of family life; benefits and problems encountered. F-W-S</p>	<p>212-624 Advanced Child Study 3 Cr. A study of principles and review of literature pertaining to children. Prerequisites: 212-124 and 212-264.</p>	<p>212-664A Special Topics in Early Childhood Curriculum 1-3 Cr. Philosophy and methodology of early childhood education: problems confronting teachers. Repeatable for credit. F-W-S</p>
<p>212-554 The Single-Parent Family 1 Cr. Description, statistical trends and problems of single-parent families. F-W</p>	<p>212-626 Special Topics in the Study of Family Life 1-3 Cr. Family life programs and literature; individual study of problems of personal or professional interest. Prerequisite: 212-350. Repeatable for credit. F-W-S</p>	<p>212-665 Administration—Early Childhood Education Programs 3 Cr. A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required. Prerequisite: 212-408B. F</p>
<p>212-570 Singlehood 1 Cr. Experiences of singles; singlehood as a phase in life cycle and as a life-style in contemporary society. Prerequisite: 212-250. F-W-S</p>	<p>212-637 Seminar in Child Development 2 Cr. Special problems and aspects in child development; preference given to students' interests. Prerequisite: consent of instructor.</p>	<p>212-666 Family Planning 1 Cr. Factors influencing family planning; knowledge and services for effective family planning practice. Prerequisite: one undergraduate course in family relations.</p>
<p>212-580 Future of the Family 1 Cr. Experimental and utopian family forms; future of the family. W</p>	<p>212-638 Child Abuse and Neglect 2 Cr. How child abuse and neglect affects the abused/neglected child and the abusing/neglecting family; ways of coping with family and social problems. Prerequisites: 212-124, 212-250 or consent of instructor. F</p>	<p>212-668 The Aging Person 2 Cr. Characteristics and needs of aged members of society; intergenerational relationships of family members. F-W</p>
<p>212-585 Family Based Employee Assistance Programs 3 Cr. Structures and functions of Employee Assistance Programs with employees and their families being the primary unit of analysis and service. Prerequisite: permission by instructor and junior standing F-W-S</p>	<p>212-650 Introduction to Marriage and Family Therapy 3 Cr. Conceptual frameworks and approaches to marriage and family counseling. Prerequisite: consent of instructor. F</p>	<p>212-669 Seminar—The Culturally Distinct Child and Family 3 Cr. Study of ethnic, racial, cultural and economic influences on the child and family in the United States. Emphasis on improving human interactions. Prerequisite: 212-324 or 212-350. F-W</p>
<p>212-590 Family Research and Methodology 3 Cr. Analysis of family theory, research methodology, and selected topics in family relations. Prerequisites: 212-250 and 212-350. W</p>		

212-690 Death Education and Counseling in Families 2 Cr. Death and dying theory; research, practice and application in education and individual and family counseling. Prerequisite: 212-351 or consent of instructor.

212-693 Practicum in Child Development and Family Life 4-8 Cr. Practicum experiences in child development, family relationships and human resource management within a community agency, business or organization. Prerequisite: consent of instructor. F-W-S

CLOTHING AND TEXTILES

214-109 Applied Design for Family Living 2 Cr. Identification and application of design elements and principles to specific areas of home economics. F-W

214-110 Principles of Apparel Design 1 Cr. Elements and organization of design in contemporary apparel for men and women. F-W

214-112 Aesthetics of Apparel 2-2 Cr. Design elements and principles as related to apparel. Interrelationship of fabric and style of apparel as applied to the individual.

214-120 Introduction to Apparel/Textiles/Merchandising 2 Cr. Careers in fashion merchandising, clothing and textile industries terminology; professional and personal development. F-W

214-140 Textiles 3 Cr. Selection, use and care of clothing and household fabrics; analysis of their components. Special course fee. F-W

214-200 Fashion Fabrics 1 Cr. Current fabrics and their application in apparel and the home. Prerequisites: 214-140, 214-112. F-W-S

214-202 Quality Analysis of Sewn Products 3 Cr. Factors that influence quality levels in manufactured apparel and other sewn products. Prerequisites: 214-110, 214-120, 214-140. F-W-S

214-225 Clothing and Textile Industry 3 Cr. Organization, promotion methods, and interrelationship of textile and clothing industries; consumer demand and diffusion of fashion. Prerequisite: 214-140. F-W

214-227 Basic Merchandising 3 Cr. Merchandising in department, specialty and discount stores; marketing strategies, operations, buying, trend merchandising, and fundamentals for apparel and hardlines. Prerequisite: 214-120. F-W

214-230 Merchandise Planning and Control 4 Cr. Techniques of merchandising fashion departments: budgeting, assortment planning, managing inventory; buying for resale. Prerequisites: 214-227, 355-119 or 355-120. F-W-S

214-266 Apparel Construction 3 Cr. Construction theory and principles of fitting applied to garment construction. Recommended: 214-140. F-W

214-268 Outdoor Apparel and Equipment 2 Cr. Selection, construction, and maintenance of outdoor apparel and fabric equipment. F

214-274 Apparel Manufacturing 3 Cr. Production planning, quality control and analysis of apparel industry. Prerequisites: 214-266, consent of instructor. F-W

214-280 Flat Pattern 3 Cr. Develop paper patterns by varying a master pattern. Original garments are designed and constructed. Prerequisite: 214-266.

214-285 Design for Apparel Production 2 Cr. Development of working apparel sketches for interpretation by apparel production personnel. Prerequisites: 214-110, 304-101. F-W-S

214-326 Professional Mini Encounter .5 Cr. Observation of company operation and participation with specific executive personnel for a two-day period in field related to the student's program. Prerequisite: 214-398, or equivalent. F-W

214-327 Ready-To-Wear Merchandising 2 Cr. Techniques for maximizing volume and profit within predetermined market objectives, covering major ready-to-wear groupings. Prerequisites: 160-206, 214-120 and 214-225. F-W

214-329 Fashion Merchandising Promotion 3 Cr. Application of fashion merchandising promotion procedures: display, oral and written promotional communication, and publicity. Special course fee. Prerequisite: 214-227. F-W-S

214-330 Home Furnishings Merchandising 2 Cr. Home furnishings merchandised by primary types of retail outlets. Special course fee. Prerequisites: 214-225 and 214-227. F-W

214-339 Apparel Merchandising 1 Cr. Merchandising female apparel from showroom to consumer. Special course fee. Prerequisites: 214-140, 214-330. F-W-S

214-366 Pattern Adjustment and Fit 2 Cr. Theory and techniques of selecting, measuring and adjusting patterns; application of fitting problems to individual figure. Prerequisite: 214-266 or consent of instructor. F-W

214-368 Experimental Clothing 3 Cr. Application of problem-solving techniques in designing and constructing garments using client approach. (Students in this course will not receive credit for 214-466 or 214-566). Prerequisites: 214-110, 214-140 and 214-366. F

214-374 Apparel Manufacturing Laboratory 2 Cr. Practical application of concepts and procedures involved in the manufacture of marketable apparel products. Not available to students who have completed 214-272 Industrial Sewing. Special course fee. Prerequisite: 214-274.

214-375 Grading Apparel Patterns 2 Cr. Develop grading charts. Proportionately change patterns to produce size ranges for various figure types. Prerequisite: 214-266. F-W

214-398 Fashion Merchandising Field Experience 2 Cr. Off-campus work and study in approved position to better understand challenges and potentials of various careers in merchandising and clothing and textile industries. Prerequisite: 214-120. F-W-S

214-400 Self-Presentation in Business 1 Cr. Learn and practice skills of self-presentation in business and professional world. F-W

214-402 Undergraduate Clothing and Textile Research 2 Cr. Individual investigation of a specific clothing and textiles interest; correlate clothing and textiles with related fields. F-W

214-426 Fashion Merchandising Practicum 3 Cr. Observation and structured experience in merchandising procedures dealing with complete operations and management of retail establishment. Prerequisites: 214-227, 214-329 or consent of instructor. F-W-S

214-435 Merchandising Systems 1 Cr. Analysis, evaluation, and decision making regarding systems and reports used in major forms of retail operations and merchandising. F

214-449C Clothing, Textiles and Design Cooperative Education 3-6 Cr. Full-time supervised work experience with an approved clothing and textiles business/industry in an area related to the student's major concentration. Selection by application and interview. Prerequisites: 214-398, 2.75 Minimum GPA and JR/SR Standing at time of enrollment F-W-S

214-449F Fashion Merchandising Cooperative Education 3-6 Cr. Full-time work and training in an approved position at a pre-selected business related to the student's major. Selection by application and interview. Prerequisites: 214-398, 2.75 Minimum GPA, and Senior standing at time of enrollment F-W-S

214-492 Practicum in Textile Printing 2 Cr. Use of textile design techniques: silk screen, tie dye, printing and batik; emphasis on good design and creativity. Special course fee. Prerequisite: 304-101. F-W

214-515 Clothing for Special Needs 2 Cr. Methods by which the disabled, handicapped, elderly, and other people with special needs may have their clothing needs met. F-W

214-519 International Economic Trends in Textiles/Clothing 2 Cr. Economic importance of the textile and apparel industries in the U.S.A. and the world. Special course fee. Prerequisites: 214-140 and 320-210. F-W

214-525 Men's and Boys' Merchandising 1 Cr. Specialized techniques of merchandising men's wear and boys' wear: stock planning, market trends and controls. Prerequisite: 214-327. F-W

214-527 Store Management 3 Cr. Develop management skills for retail stores of varying size. Prerequisites: 214-430 or consent of instructor, senior or graduate standing. F-W

214-529 Fashion Merchandising Internship 8 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. F-W-S

214-529A Fashion Merchandising Internship 6 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. S

214-535 Special Topics in Fashion Merchandising 1-2 Cr. Special topics in fashion merchandising. Repeatable for different topics. Prerequisites: junior standing, completion of basic courses within the area or consent of instructor. Repeatable for credit.

214-541 Fabric Maintenance 2 Cr. Products and methods used in cleaning textile products; compare home and commercial laundry methods and dry cleaning procedures and their effects on textile products. Prerequisite: 214-140. F

214-545 Textiles for Interiors 2 Cr. Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses. F

214-550 Textile Evaluation 3 Cr. Problems in fiber identification, fabric performance, and care; chemical and microscopic testing procedures; methods for gathering and interpreting data; individual problems. Prerequisite: 214-140. F-W

214-555 Special Topics in Textiles and Clothing 1-2 Cr. Special topics in clothing and textiles. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-568 Engineered Tailoring 2 Cr. Industrial production methods applied to construction of tailored garments. Prerequisites: 214-266, 214-272. F

214-581 Functional Clothing Design 3 Cr. Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human body, structural properties of materials, and apparel forms. Prerequisites: 214-368, 214-550, 214-580. F

214-590 Practicum in Textile Design 3 Cr. Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique, and hooking; emphasis on good design and creativity. Prerequisites: 304-101, 304-101 or consent of instructor F-W

214-591 Natural Dyeing and Hand Spinning 2 Cr. Gather dyes from local environment, select mordants, dye fibers; spin dyed fibers on spinning wheels/drop spindles; historic dimensions. Special course fee. S

214-593 Design Problems in Textile Printing

3 Cr. Advanced textile printing practicum with specific concern for design problems. Special course fee. Prerequisite: 214-492 or consent of instructor.

214-594 Knit Design and Technology 2 Cr. Basic stitch formation and patterning of warp and filling knits. Influences on aesthetics and performance of knit fabrics. Production of knitted garments on a flatbed knitting machine. Prerequisite: 214-140. F-W-S

214-595 Special Topics in Textile Design 1-2 Cr. Special topics in textile design. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-605 International Study Tour to the Fashion Industries 3-6 Cr. Tour of international centers of clothing, textiles, and related arts. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. S

214-610 History of Costume—Ancient to European 3 Cr. Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume. F

214-611 History of American Costume 3 Cr. Evolution of American costume from colonial times to present; costume characteristics and social, political, religious and cultural influences. W

214-617 Social/Psychological Aspects of Clothing 3 Cr. Social and psychological influence of dress on individual and group behavior patterns. F-W

214-625 Mass Merchandising 2 Cr. Comparative history, planning, design, and techniques of merchandising and operations. Special course fee. Prerequisites: 214-227, 214-339. F-W

214-639 National Study Tour to Fashion Industry 1 Cr. Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. Prerequisites: consent of instructor and junior, senior or graduate standing. W

214-650 Textile Science 3 Cr. Structural aspects of textile fibers, yarns, and fabrics: modification of fibers; fiber and fabric analysis. Prerequisite: 214-140. F

214-655 Recent Developments in Clothing and Textiles 2 Cr. Apparel and textiles explored in light of new developments in these and related fields. Prerequisites: 214-140, 214-266 or consent of instructor.

214-666 Tailoring 3 Cr. Construction of suits and coats using custom tailoring techniques. Prerequisite: 214-266. W

214-670 Theatrical Costuming 3 Cr. Problems in costuming theatrical productions; plan, design and construct costumes for major theater production, as coordinated by director of production. Prerequisite: 214-266 or consent of instructor.

214-680 Draping 3 Cr. Application of draping principles in design and construction of garments; emphasis on creativity. Prerequisite: 214-266. F-W

214-681 Apparel Design—Draping 1 Cr. Advanced techniques of draping in apparel design; emphasis on individuality and fabrics of interesting texture and design. Prerequisite: 214-680.

214-682 Apparel Design—Flat Pattern 1 Cr. Interpretation of original designs using pattern drafting and advanced flat pattern methods. Prerequisite: 214-580.

214-685 Apparel Design Studio 2 Cr. Analysis of designer responsibilities. Creation and development of original designs using flat pattern and/or draping techniques. Preparation of a professional portfolio. Prerequisites: 214-581, 214-680, 304-534. W

214-690 Advanced Fiber Design 1-3 Cr. Creative exploration of textile design: stitchery and applique. Prerequisite: 214-590. W-SO

214-693 Structural Design and Weaving 2 Cr. Experiences in loom weaving including two and four harness techniques. Special course fee. Prerequisite: 304-101 or consent of instructor. F-W-S

214-694 Advanced Weaving Studio 2 Cr. Complex hand-weaving techniques: block theory, pile constructions, leno techniques and double cloth. Individual work encouraged. Special course fee. Prerequisite: 214-693, or equivalent. F-W-S

214-695 Historic and Contemporary Fabrics 3 Cr. Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience. W

FOOD SCIENCE AND NUTRITION

229-101 Dietetics As a Profession 1 Cr. Survey of types of dietetic and foodservice administration programs in the United States; role and function of staff; professional literature. F

229-124 Foods 4 Cr. Scientific principles and application in the selection, preparation and service of food. F-W

229-136 Nutrition for Young Children 2 Cr. Food needs of infants and young children. For early childhood education majors; not applicable for students with credit in 229-212. W

229-202 Fundamentals of Nutrition 2 Cr. Basic principles of applied nutrition; not applicable for students in Home Economics Education, Dietetics, Home Economics in Business, Food and Nutrition, nor those with credit in 229-212. F-W

229-205 Nutrition for Weight Control 2 Cr. Principles of nutrition related to physical stamina, mental alertness and emotional stability of people undergoing weight modification. F-W

229-206 Nutrition in the Hospitality Industry 2 Cr. Basic principles with application to the Hospitality industry. Basic physiological nutrition; cultural and psychological influences on food preference. Interpretation of nutrition information, food composition data, and discussion of appropriate products and services. Nutrition analysis and programming on and off the computer will be stressed. Not appropriate for students with credit in 229-202 or 229-212. Prerequisite: Admission to Hotel & Restaurant Mgt program W

229-212 Nutrition 3 Cr. Basic principles of nutrition applied to current issues in health maintenance. For Dietetics, Home Economics Education Home Economics in Business, Food and Nutrition majors and/or students with science prerequisites. Prerequisites: 308-132 and 311-115 or 311-125. F-W

229-220 Outdoor Cooking 1 Cr. Food preparation principles in cooking and serving outdoors; equipment for outdoor food preparation; foods for camping, backpacking and canoe camping; preparing wild game and gathering and preparing wild foods. F-W-S

229-225 Special Topics in Food and Nutrition 1-2 Cr. Study of special topics in Food and Nutrition. Prerequisite: consent of instructor. Repeatable for credit. S

229-240 Food Science 4 Cr. Physical and chemical changes affecting selection, preparation and service of food. Prerequisite: 311-201. F-W

229-260 Menu Planning and Design 2 Cr. Principles of menu planning, design and production for commercial and institutional food establishments.

229-300 Creative Table Appointments 1 Cr. Principles of design in selection of table appointments for creative entertaining. Not applicable for students with credit in 229-308. Prerequisite: 304-101.

229-305 Baking Processes 1 Cr. Art and science of baking: home and industrial methods. May be repeated for different subunits. Repeatable for credit.

229-308 Management of Food Production 3 Cr. Development and application of management principles to decision making in small batch food production which is based on menu driven concepts. Special course fee. Prerequisites: 229-124 or 229-240 and 229-212 or 229-202. F-W-S

229-397C Field Experience (Seminar) 1-2 Cr. Field experience related to the dietetic, food industry, foodservice administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2 credit option.

229-397E Field Experience 1-2 Cr. Field experience related to the dietetic, food industry, foodservice administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2 credit option.

229-404 Foodservice for Children 3 Cr. Overview of food preparation and food-service administration principles with specific application to food production for children in the home and in centers. Prerequisites: 229-136, 229-212. F-W

229-410 Advanced Nutrition 3 Cr. Principles of human nutrition applied to individual, family, community and world problems. Prerequisites: 229-212 and 311-511. F-W

229-446 Food Preservation 1 Cr. Principles and practical application of methods of food preservation and storage. F-W-S

229-505 Nutrition for the Aged 2 Cr. Nutrient requirements and food consumption patterns of the elderly; food services for aging Americans. Prerequisite: 229-212 or consent of instructor. W

229-525 Special Topics in Food and Nutrition 1-2 Cr. Study of special topics in Food and Nutrition. Prerequisites: 229-212, consent of instructor and for 500 level, completion of basic courses in the area. Repeatable for credit. F

229-550 Fast Food Operations 3 Cr. Organization and function of fast foodservice operations. Work methods procedures, staffing, food quality and quantity control, space and equipment maintenance, safety, sanitation, merchandising and career options will be covered. Not available to students for credit who have taken 245-550. Prerequisites: 229-124 or 229-240, 229-308 and 245-311. F-W

229-604 Foodservice Practicum for Child Care Centers 1 Cr. Application of food management principles for directors of child care centers: personnel management, menu planning; recipe selection, standardization, and adjustment; food purchasing and storage, food production and service, equipment use, sanitation and safety, and nutrition education in day-care setting. GRADUATE OBJECTIVE: Analyze food and nutrition services of a child care operation and develop a plan of action for a stated function. F-W

229-606 Nutrition Education 3 Cr. Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources. Prerequisites: 229-212, 242-201, 229-308, 229-410 or consumer course if required in program. consent of instructor, and junior standing F-W

229-612 Clinical Experience—Community Nutrition Programs 1 Cr. Practical experience with community nutrition program; basic nutrition program or foodservice operation and nutrition education activity. Recommended: 229-618 and 229-630. Prerequisites: 229-308 or 229-318, 229-410, 229-606 and 229-680. F-W

229-614 Catering 3 Cr. Theory and application of operational and managerial principles for on/off-premise catering for special events. (Cannot be taken for credit by students who have previously taken 245-614) Prerequisites: 229-124, 229-260 or By instructor's consent. Junior standing or above. F-W

229-618 Diet Therapy 4 Cr. Principles and methods for use of diet as therapy in certain pathological conditions. Prerequisites: 229-308, 229-410. F-W

229-620 Food Styling 1-3 Cr. Food as media for artistic expression; effective use of color, form and texture. Prerequisites: 229-124 or 229-249 and senior or graduate standing or consent of instructor. Repeatable for credit. F-W-SE

229-630 Food Behavior 3 Cr. Food behavior: how it controls eating problems, resultant nutritional status; formation of food patterns to meet physical, physiological, psychological or social needs; modification of food behavior. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 (preferably within past two years). F

229-631 Readings in Food Science and Nutrition 2 Cr. Critical reading, evaluating, and reporting from pertinent current journals and other publications. Repeatable for credit.

229-633 Maternal and Child Nutrition 3 Cr. Application of principles to maternal, infant, child and adolescent nutrition. Prerequisites: 229-212 and 308-132. F-W

229-638 Experimental Foods 3 Cr. Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area. Prerequisites: 229-124 or 229-240 and 311-201. F-W

229-642 Advanced Foods 2 Cr. Comparative studies of food selection and preparation; appraisal of foods. Prerequisite: 229-124 or 229-240. F-W

229-650 Food Processing 3 Cr. Industrial methods used to prepare and preserve food. Prerequisites: 229-124 or 229-240, 355-120. W

229-661 Social and Cultural Aspects of Food 2 Cr. Social, economic, and cultural influence on human food patterns. Prerequisites: 229-124 or 229-240 and senior or graduate standing or consent of instructor. F-W-SO

229-665 International Food Study Tour 1-6 Cr. Specific international setting tour to study culture, food patterns and industry. Repeatable for credit. SE

229-680 Community Nutrition 3 Cr. Current status and legislative regulation of community nutrition programs; assessment of community needs and resources; program planning, funding and evaluation; role of community nutritionist/home economist as program planner. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 or equivalent (preferably within last two years). W

HOME ECONOMICS EDUCATION

242-101 Experiential Learning in Home Economics 1 Cr. Contribution of home economics education to development of individuals and families; responsibilities of a professionally trained home economist. F

242-201 Teaching Techniques in Home Economics 2 Cr. Study of teaching techniques and skills for home economics learning experiences in relation to classroom organization and objectives. F-W

242-240 Clinical Experience in Microteaching 1 Cr. Microlessons with microclasses will be videotaped and reviewed for self-evaluation and critique with instructor. F-W

242-241 Clinical Experiences in the Community 1 Cr. Plan and implement home economics learning experiences for children and adults in community programs. Repeatable for credit. F-W

242-301 Home Economics Curriculum 3 Cr. Development of curriculum to meet needs of students in home economics programs. Prerequisite: Junior or senior standing. F-W

242-341 Clinical Experiences in Schools 1 Cr. Supervised experience in classroom teaching for development of motor, perceptual, social and cognitive learning through home economics substantive areas. Recommended: 242-240. Prerequisite: junior standing. F-W

242-397C Field Experience - Home Economics 1 Cr. Field experience related to Home Economics skills and knowledge used in teaching Home Economics Wage Earning Courses at secondary level. F-W-S

242-397E Field Experience - Home Economics 1 Cr. Field experience related to Home Economics skills and knowledge used in teaching Home Economics Wage Earning Courses at secondary level. F-W-S

242-443 Clinical Seminar in Home Economics Education 2 Cr. Preparation for and evaluation of student teaching experience: analysis of classroom situation and evaluation of teaching process. Concurrent enrollment in 242-444 required. Recommended: 242-301. F-W

242-444 Practicum in Teaching Home Economics 6 Cr. Experience in applying teaching and learning theory: self-evaluation and analysis of teaching/learning situation under guidance of master teacher. Concurrent enrollment in 242-443 required. Recommended: 242-301. F-W

242-488 Internship Teaching 8 Cr. Alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one semester. Prerequisite: 242-301. F-W

242-500 Externship—Home Economics Community Education 4-8 Cr. Practicum in one or more of following home economics education programs: extension services, elementary education, post-secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. Prerequisite: consent of department. F-W

242-503 Home Economics in the Middle and Elementary School 3 Cr. Develop techniques, materials and curriculum concepts in home economics with application of human growth and development principles for teaching in middle and elementary school. W

242-544 Future Homemakers of America Workshop 1 Cr. Integration of Future Homemakers of America and the Home Economics Related Occupations student organizations into the home economics classrooms and programs. Prerequisite: junior standing.

242-620 Vocational Programs in Home Economics 2 Cr. Techniques, materials and curriculum for home economics wage-earning programs in secondary and post-secondary schools; preliminary procedures for program development. Prerequisites: 199-502 and 242-301. F-W

242-623 Education for Consumer Homemaking 2 Cr. Curriculum development; evaluation of methods and materials for teaching consumer education at secondary level. Prerequisite: 242-301. S

242-630 Concepts of Extension Education 2 Cr. Concepts and processes in conducting educational programs for adults and youth: philosophy, objectives and organization of extension education; leadership, development, program development, teaching methods and evaluation. Prerequisite: senior or graduate standing in Home Economics or Home Economics Education. W

242-651 Family Life Education Programs 2 Cr. Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Prerequisites: senior standing, consent of instructor. F-W

HABITATIONAL RESOURCES

245-X98 Hotel and Restaurant Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. Prerequisite: 245-100. F-W-S

245-100 The Role of Management in Hospitality Industry 2 Cr. Prospective managers define and analyze nature of work, people, change and education and their interrelationships within hospitality industry. F-W

245-200 Introduction to Property Management 2 Cr. Management in commercial and multi-family property. Employees, management tools, government involvement, community development, clients, property law and tax requirements. F-W-S

245-201 Hospitality Housekeeping Management 2 Cr. Management principles applied to duties and responsibilities of housekeepers in hotels, motels, institutions and other hospitality enterprises. F-W

245-202 Front Office Management 3 Cr. Principles required to organize, operate and manage hotel or motel front office; guest needs, salesmanship and procedures for different types of front office operations. F-W-S

245-205 Hospitality Organization Management 3 Cr. Management principles for hotels and restaurants, supervisory development and training, labor relations, union contracts, ownership and financial structure and managerial interpretation and evaluation of current systems and procedures. Prerequisite: 245-100. F-W

245-222 Institutional Food Purchasing 2 Cr. Methods of large-quantity food purchasing; determining standards, specific needs and industrial offerings; formulating specifications, buying procedures and controls. Prerequisite: 229-124. F-W

245-240 Introduction to Tourism and the Travel Industry 2 Cr. Principles and current knowledge of domestic and international tourism; benefits to community, area, state and nation; trends and potentials. Prerequisite: 320-210. F-W-S

245-250 Family Housing 3 Cr. Relationship of space, equipment, aesthetics and culture to human habitat. F-W

245-275 Management of Family Resources 3 Cr. Application of basic management concepts to family economics. F-W

245-301 Bar Management 2 Cr. History, format and management of bar operations. F-W

245-311 Quantity Food Production 3 Cr. Quantity food production concepts; menu planning, recipe development, work production schedules, production analysis, food and labor cost controls, and introduction to productivity and work simplification concepts; lab work in food production and service. Prerequisite: 229-124. F-W-S

245-312 Restaurant Operational Management 3 Cr. Service of special functions, banquets, receptions: planning, preparation service, menu planning, cost controls, classical buffet setups and personnel organization. Prerequisites: 229-124 and 245-311. F-W-S

245-340 Development of Tourism Attractions 3 Cr. Diversified natural and man-made background tourism elements (BTE): preservation and incorporation of concepts for development of tourism destinations. Prerequisites: 245-240 and 320-210. F-W-S

245-341 Tourism Goods and Services 3 Cr. Total and component parts of tourism goods and services; present and future patterns of supply and demand. Prerequisites: 245-240 and 320-201. F-W

245-344 Hospitality Marketing and Sales 3 Cr. Analysis of theories, fundamental principles and techniques of hospitality marketing and convention sales; functions, interrelationships and coordination of all hospitality departments and their roles in assuring success of marketing effort. Prerequisite: junior standing or permission of the instructor F-W-S

245-350 Psycho-Socio Aspects of Housing 2 Cr. Analysis of socio-psychological factors associated with housing. Biological, psychological, and sociological human needs are used to evaluate residents' satisfaction of their housing environment. Possible responses to residential dissatisfaction are identified and evaluated. Prerequisites: 245-250 and 387-110 or 479-110, or instructor's permission.

245-355 Energy and Household Equipment 3 Cr. Physical principles and fuels involved in household appliance operation; selection, operation, use and care of small, portable appliances. F

245-360 Consumer Economics 3 Cr. Motives for consumption, family income and expenditures, selection of commodities and services, buying and selling practices; evaluate consumer aids, investigate local situations. Prerequisite: 320-201. F-W

245-370 Hotel and Restaurant Accounting 3 Cr. Design and interpretation of specialized accounting and financial control systems in management decision making; uniform system of accounts, departmentalized costing procedures, statement analysis and interpretation. Prerequisite: 160-206. F-W

245-371 Food, Beverage and Labor Cost Controls 3 Cr. The use of financial techniques and systems to control food, beverage and labor costs in hospitality food service operations. F-W-S

245-375 Computer Systems for Foodservice 2 Cr. Functions of computers in a variety of foodservice operations with specific emphasis on point-of-sale systems and foodservice application hardware. Hands-on experience using the NCR 2160 system and microcomputers. Prerequisites: 200-325 or 300-111, 245-311, 245-371 or 354-140, or permission of instructor W

245-414 Haute Cuisine 3 Cr. Study and preparation of classic food items and service, culminating in service of formal banquet. Prerequisites: 245-312 and senior standing with a 2.5 GPA. W

245-436 Commercial and Residential Lighting 2 Cr. Practical information on light for general residential living; sociological, psychological and physical aspects of lighting environment. F

245-455 Kitchen Planning 2 Cr. Arrangement of work centers, equipment, storage and activities for maximum efficiency in residential kitchen design. Prerequisite: 245-250 or consent of instructor. F-S

245-482 Seminar in Hotel and Restaurant Management 3 Cr. An advanced course in management. The student will select and research a current topic of importance to the industry. Prerequisites: 245-140 and 245-300. Repeatable for credit.

245-495 Hotel and Restaurant Internship 6-8 Cr. Prearranged advanced positions similar to management training programs in hospitality management. (Available for 8 semester credits and 6 summer credits. Summer internships 12 weeks minimum). Prerequisite: Ninety credits with 3.25 GPA, Hotel and Restaurant major, and Internship Committee approval. F-W-S

245-501 Foodservice Administration 3 Cr. Organization and administration of institutional foodservice systems, personnel selection and training, cost control and problems of supervision. Prerequisite: 229-318. F-W

245-513 Quantity Food Production and Service 3 Cr. Application of food preparation principles to large-quantity production; menu and formula standardization, food production costs and menu planning for institutions. Prerequisite: 245-312 or 245-501. F-W-S

245-515 Lodging Administration 3 Cr. Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-efficient organization. Prerequisites: 245-201 and 245-202. F-S

<p>245-521 Foodservice Equipment 2 Cr. Factors affecting design, selection, physical facilities and utilities involved in food-service equipment. Prerequisite: 130-110. F-W-S</p>	<p>245-640 Sociocultural System of Tourism 3 Cr. Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourists and residents. W</p>	<p>245-663 Consumer Law 1 Cr. Major federal and state consumer protection laws, difficulties in obtaining passage and implementation, and pending federal and state consumer protection legislation. Prerequisite: 245-360 or consent of instructor. F-W</p>
<p>245-531 Ecology of Habitat 2 Cr. Philosophical and physical aspects of human housing, with international perspective; insight into family housing needs through lab work; role of home economist in solution of world housing problems. Prerequisite: six credits of housing, equipment or equivalent. F</p>	<p>245-644 Resort Planning and Operation 3 Cr. Planning and operation of individual destination resorts. Analysis of resort concept, history, master planning, environmental impact, facility design, maintenance and operational management. Prerequisite: 245-340 or Permission of instructor W</p>	<p>245-670 Hospitality—Financial Analysis/Budget/Forecasting 3 Cr. Application of accounting and financial analysis techniques to managerial decision-making in hospitality industry. Prerequisites: 160-206, 245-370 and 245-371. F-W-S</p>
<p>245-550 Fast Food Operations 3 Cr. Organization and function of fast foodservice operations. Work methods procedures, staffing, food quality and quantity control, space and maintenance, safety, sanitation, merchandising and career options will be covered. Not available to students for credit who have taken 229-550. F-W</p>	<p>245-645 Geography of Tourism 3 Cr. Locational analysis of land use and human migration in national and international tourism. Prerequisites: 245-240, 245-340 or consent of instructor. F-W</p>	<p>245-676 Family Finance 2 Cr. Financial decisions and judgments that average individuals and families must make during a lifetime; income and occupation, family expenditures, credit, savings, taxes and estate plans. Prerequisite: 320-201. F-W</p>
<p>245-565 Consumer Aspects of Life Insurance 1 Cr. Comparative methods of determining life insurance needs; evaluation of adequacy of policy and program features; relevance to family financial planning. Prerequisite: 245-275 or consent of instructor. F</p>	<p>245-650 Human Habitat 3 Cr. Influence of different socio-economic factors on effective use of family housing resources; adjustment and flexibility of safety, comfort, convenience, physical and financial maintenance based on family cycle. Field trips and individual projects. F</p>	<p>245-677 Financial Planning for Retirement 2 Cr. Financial considerations made in preparing for and during retirement. Emphasis on the values, goals, income, expenditures, credit, savings, investments, taxes and estate plans. Prerequisite: Senior standing F-W-S</p>
<p>245-566 Consumer Aspects of Health Insurance 1 Cr. Types and sources of health insurance available to U.S. consumer; analysis of American health-care crisis and proposed solutions. Prerequisite: 245-275 or consent of instructor. F</p>	<p>245-655 Major Kitchen Appliances 3 Cr. Detailed structure and performance analysis of ranges, refrigerators, freezers, disposers, dishwashers, microwave ovens and selected kitchen appliances. Prerequisite: 245-355, or equivalent. S</p>	<p>245-681 Special Problems in Habitational Resources 2 Cr. Current problems in habitational resources; seminar topic chosen by instructor, individual or group. Repeatable for credit. F-W-S</p>
<p>245-600 Integrated Management Systems—Hospitality 2 Cr. Exploration, comparison and synthesis of practices, concepts and theories in hospitality management systems. Prerequisite: 245-205. F-W-S</p>	<p>245-656 Microwave Oven 2 Cr. Application of microwave heating principles to food preparation and service. F-W-S</p>	<p>245-682 Hospitality and the Handicapped Traveler 1 Cr. Provide increased sensitivity to needs of handicapped traveler; problems and possible solutions for hospitality organizations. F-W</p>
<p>245-614 Catering 3 Cr. Theory and application of operational and managerial principles for on/off-premise catering for special events. (Cannot be taken for credit by students who have previously taken 229-614. Prerequisites: 229-124, 229-260 or by instructor's consent Junior standing or above F-W</p>	<p>245-657 Foodservice Microwave Oven 2 Cr. Microwave heating principles using commercial microwave ovens in foodservice. Prerequisite: 229-124 or 229-240. F-W-S</p>	<p>245-684 Seminar in Property Management 2 Cr. Culminating professional course for the Property Management Minor Program. Preparation of a property management plan for a specific property. Discussion of current trends and industry problems. Prerequisite: Reserved for final semester for students in Property Management Minor. W</p>
<p>245-625 Hospitality Industry Law and Liability 3 Cr. Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality. Prerequisite: 160-318. F-W</p>	<p>245-660 Consumer Credit 1 Cr. Types and sources of credit, determination of credit costs, considerations before using, and regulatory laws. Prerequisite: 245-360 or consent of instructor. S</p>	<p>245-685 Demonstration Techniques 2 Cr. Application of demonstration principles in planning and presenting all types of home economics demonstrations. F-W</p>
<p>245-626 Hospitality Industry—Employee and Labor Relations 2 Cr. Investigation of employee and labor relations in the hospitality industry; history, legality and techniques of dealing with unionization. F-W</p>	<p>245-662 Consumer Protection 1 Cr. Major federal and state consumer protection agencies; major business, industry and private organizations set up to aid consumers; avenues of individual and collective consumer redress. Prerequisite: 245-360 or consent of instructor. W</p>	

LIBERAL STUDIES

INTERDEPARTMENTAL

300-101 Computer Literacy 2 Cr. Brief interdisciplinary introduction to computers, including the areas of hardware, software, history, programming logic and language, different types of systems and applications of computers in various areas. A student who takes Computer Applications in Business (354-142) cannot also get credit in Computer Literacy. F-W

300-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair. F-W-S

300-250 Soviet Seminar Tour 2 Cr. Introduction to Russian civilization and contemporary Soviet society and government: tours of schools, museums, churches and historical sites; seminars with Soviet students and community leaders. W

300-255 Creative Problem Solving 2 Cr. Transdisciplinary problem solving through acquaintance with and practice in the use of a systematic approach to real problems.

300-260 The China Seminar 2 Cr. Introduction to Chinese civilization, contemporary society, and government including tours within China of schools, museums, communes, factories and historical sites. F

300-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair. F-W-S

300-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisites: consent of instructor and department chair. F-W-S

300-510 Introduction to Women's Studies 2 Cr. An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. F-W

300-511 Topic in Women's Studies 1-3 Cr. Exploring, from interdisciplinary perspective, new information and ideas in a selected area of significance to women's studies. Prerequisite: 300-510 or consent of instructor.

300-575 The Ascent of Man 2 Cr. Exploring the nature and intellectual, philosophical and technical growth of humankind using "The Ascent of Man" TV series as basis for thought and discussion. Prerequisite: junior standing or consent of instructor. W

ANTHROPOLOGY

303-220 Introduction to Cultural Anthropology 3 Cr. Introduction to concepts and methods; variability of culture; outline of cultural elements; processes of cultural change. F-W

303-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally, entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor and dept chair F-W-S

303-250 The Human Past 3 Cr. Biological anthropology: humans as primates, origins of humans, stages of human evolution, and relationship of biology and culture. F-W

303-300 Native Americans 3 Cr. North American Indians: native American cultures prior to European contact, Indian/European historical relationships and contemporary reservation/urban Indian life and issues. F

303-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

303-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

303-610 The Anthropological Study of Family Systems 3 Cr. Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions. Prerequisite: 303-220 or consent of instructor. W

ART

304-100 Drawing I 3 Cr. Concentration on the development of visual sensitivity through drawing with various media. F-W

304-101 Fundamentals of Design 3 Cr. Basic two- and three-dimensional design using various media for development of visual sensitivity. F-W

304-145 The Practice of Art 2 Cr. Introduction to creative concepts, techniques of presentation, practices in studio art, function of criticism, portfolio ingredients and opportunities in the art world. S

304-202 Introduction to Art 3 Cr. Art appreciation and historical survey for the non-Art major. F

304-204 Interior Design 3 Cr. Design and development of interior spaces with a sensitivity to human interaction, materials, and furnishing. Prerequisite: 304-101. F-W

304-210 Letter Form Design 3 Cr. Design of letterforms, figures, and visual symbols; history and development of type; calligraphy; page composition for various formats and audiences. Prerequisites: 304-100, 304-101. F

304-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

304-256 Art Workshop 1-3 Cr. Selected art concepts, processes and media will vary to serve special student populations. Credit determined by individual contract. Prerequisite: consent of instructor. Repeatable for credit.

304-300 Design Theory and Methods 3 Cr. A study and application of various techniques and theories of design to fundamental design problems. Prerequisite: 170-205 or 304-101. F-W

304-304 Interior Design II 3 Cr. Design problems for interior spaces with emphasis on concepts, human interaction, and materials. Prerequisite: 304-204. F-W

304-305 Presentation Techniques 3 Cr. Experience in the various techniques of visually developing and presenting a design. F-W

304-310 Graphic Design I 3 Cr. Study and creation of visual images used to inform and/or persuade specific audiences. Prerequisite: 304-101. F-W

304-314 Interior Design Procedures and Specifications 2 Cr. Professional procedures and specifications for interior design proposals; quality control, material performance, public standards and use of related forms. Prerequisite: 304-204. S

304-315 Environmental Interior Design I 3 Cr. Analysis and application of various office systems as they apply to and are a part of an architectural setting. Prerequisite: 304-204.

304-316 Environmental Interior Design II 3 Cr. Analysis and application of various systems in an architectural setting for use in the design of public spaces, such as banks, malls, restaurants, hotels, etc. Prerequisite: 304-204.

304-319 Evolution of Design 3 Cr. Examination of basic concepts which influence the evolution of architecture, art and design. S

304-320 Interior Furniture Design 3 Cr. Applied studio projects with structural, material, economic and aesthetic considerations in the design of contemporary furniture. F-W

304-330 Industrial Design I 3 Cr. First course in the industrial design sequence providing an overview of design skills in their application to the resolution of product design problems. Prerequisites: 304-300 and 304-305 or 170-205. F-W

304-335 Product Form Design 3 Cr. Exploration of product forms through drawing and model-building techniques. Prerequisites: 304-300, 304-305, 304-330, 170-102, 170-103. F-W-S

304-340 Industrial Design II 3 Cr. Increased understanding of design as applied to the resolution of complex product design. Prerequisite: 304-330. F-W

304-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

304-360 Graphic Design II 3 Cr. Application of social, business and ethical factors affecting visual communication, while increasing sensitivity and experience in graphic design. Prerequisite: 304-310. F-W

304-380 Signage and Exhibition Design 3 Cr. Organization and design of environmental graphics through the production of signage, display, and exhibition support systems. Prerequisite: 304-360. S

304-405 Advanced Presentation Techniques for Designers 3 Cr. Techniques and skills for presentation and communication of visual materials; advanced perspective, mixed-media rendering, transparent watercolor rendering, gouache rendering applied to presentation of product's interiors and exteriors. Prerequisite: 304-305. F-W

304-410 Product and Packaging Graphics 3 Cr. Design and application of graphics to products, packages, and related display systems. Prerequisites: 304-360, (or 304-310 with instructor consent).

304-430 Industrial Design III 4 Cr. Advanced design problems chosen by consultation between student and instructor. Prerequisites: 304-330 and 304-340. F-W

304-431 Symposium in Interior Design 2 Cr. Exposure to and discussion of the practical working world of the interior designer. Prerequisite: Concurrent enrollment in 304-301. F-W

304-432 Industrial Design Portfolio 1 Cr. Role and actual development of an industrial designer's portfolio with emphasis on importance of the portfolio in communicating with prospective employers throughout the career. Prerequisite: 304-340. F-W

304-440 Industrial Design IV 4 Cr. Professional level of understanding and skill applied to advanced design problem chosen in consultation between student and instructor. Prerequisite: 304-430. F-W

304-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

304-451 Interior Design Practicum 3 Cr. Work experience with an interior designer or in design-related field arranged with interior design work experience coordinator. Prerequisites: 304-204 and 304-205. F-W

304-480 Senior Project - Graphic Design 4 Cr. Exploration of an advanced graphic design topic through an extensive project: research, production specification, and development of a presentation system. Prerequisites: 304-380 and 304-410.

304-500 Drawing II 1-3 Cr. Continuation of 304-100; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-100. Repeatable for credit. F-W

304-501 Life Drawing I 3 Cr. Drawing the human figure in action or at rest; problems in figure composition. Prerequisites: 304-100 and 304-500. F-W

304-502 Life Drawing II 1-3 Cr. Advanced problems in figure composition and graphic interpretation of the figure. Initial enrollment must be for 3 credits. Prerequisite: 304-501. Repeatable for credit. F-W

304-503 Design 3 Cr. Application of basic design principles using various media for development of visual sensitivity to three-dimensional form. Prerequisite: 304-101. Repeatable for credit. F-W

304-509 Painting I 3 Cr. Introduction to character and use of various painting media; work from still life and life with reference to problems of two-dimensional color composition. Prerequisite: 304-500. F-W-S

304-510 Painting II 1-3 Cr. Advanced work in oil painting; exploitation of medium for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-509. Repeatable for credit. F-W-S

304-511 Sculpture I 3 Cr. Introduction to sculptural concepts. Prerequisite: 304-500, or equivalent. F-W

304-512 Sculpture II 1-3 Cr. Advanced problems in sculpture; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-511. Repeatable for credit. F-W

304-513 Ceramics I 3 Cr. Basic design and techniques of ceramic production for artist/potter; forming, firing and surface treatment. F-W-S

304-514 Ceramics II 1-3 Cr. Use of clay, glazes and kiln for design and production of high-fired ceramics. Initial enrollment must be for 3 credits. Prerequisite: 304-513. Repeatable for credit. F-W-S

304-515 Art Metal I 3 Cr. Design and construction of jewelry and objects in precious and non-precious materials with relationship to human interaction. Prerequisite: 304-101, or equivalent. F-W-S

304-516 Art Metal II 1-3 Cr. Advanced problems in design and construction of jewelry, hollow forms and objects in precious and non-precious materials. Initial enrollment must be for 3 credits. Prerequisite: 304-515. Repeatable for credit. F-W-S

304-517 Printmaking I 3 Cr. Introduction to the concepts and techniques of printmaking. Prerequisites: 304-100 and 304-101. F-W-S

304-518 Printmaking II 1-3 Cr. Advanced work in the processes of relief, silkscreen, etching, or lithographic printmaking. Initial enrollment must be for 3 credits. Prerequisites: 304-500 and 304-517. Repeatable for credit. W-S

<p>304-520 Clay and Glaze Laboratory 1 Cr. Procedures and processes in testing of clays; formulation of clay bodies and development of clay slips and ceramic glazes for artist/potter. Prerequisite: 304-513 or 304-514 or consent of instructor.</p>	<p>304-602 American Art 3 Cr. Development of visual arts in the U.S. from colonial period to 1950.</p>	<p>308-150 Man and the Environment 2 Cr. Man's relationship to world environment; contemporary problems: air and water pollution, biocides, solid waste disposal, depletion of natural resources, menace of overpopulation and impending food crisis. F-W-S</p>
<p>304-522 Modern Art 3 Cr. The main currents and developments in art from Monet and Cezanne to 1950. F</p>	<p>304-603 19th Century Art in Europe 3 Cr. History of European art from about 1800 to 1900.</p>	<p>308-152 Zoology 4 Cr. Introduction to fundamental concepts of animal life, survey of animal kingdom, structure and physiology of representative animals, evolutionary relationships. F-W</p>
<p>304-525 Egyptian and Mesopotamian Art 3 Cr. The evolution of the arts of ancient Egypt and the Near East.</p>	<p>304-604 Art Since 1950 3 Cr. Developments in painting and sculpture in Europe and America since 1950.</p>	<p>308-206 Food Service and Environmental Sanitation 1 Cr. Microbial problems in food service industry: sanitation, storage, handling, distribution, serving, personnel, equipment and facilities. F-W</p>
<p>304-526 Greek and Roman Art 3 Cr. The arts of ancient Greece and Rome.</p>	<p>304-606 Oriental Art 3 Cr. Art from prehistoric times to 19th century in China, Japan and their spheres of influence.</p>	<p>308-220 Physiology of Disabilities 3 Cr. Etiology, pathology, clinical symptoms, prognosis, treatment, physical limitations resulting from specific diseases and disabilities. Prerequisite: 308-132. F-W</p>
<p>304-527 Medieval Art 3 Cr. The arts of Europe and Byzantium from late Roman Empire to end of Middle Ages.</p>	<p>304-607 Aesthetics 3 Cr. Examination of the philosophers of contending theories in art. Prerequisite: 304-522. F-W</p>	<p>308-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S</p>
<p>304-528 Italian Renaissance Art 3 Cr. Architecture, sculpture, and painting of the Italian Renaissance from 14th to 17th century.</p>	<p>305-208 Pre-teaching Observation Seminar 3 Cr. Observation of art education teaching practices in the field; various hands-on teaching assistant duties with young children; experience with actual teaching problems through observation, team teaching and microteaching. F</p>	<p>308-306 General Microbiology 4 Cr. Structure and physiology of yeasts, molds and bacteria; growth requirements, methods used in culture and identification, bacterial analysis of water and milk, other problems in sanitation and food bacteriology. F-W</p>
<p>304-529 Northern Renaissance Art 3 Cr. Renaissance art in Northern Europe from 15th to 17th century.</p>	<p>305-311 Curriculum Development for Art 2 Cr. Needs and methods for developing a sequential K-12 art curriculum. W</p>	<p>308-310 Human Sexual Biology 3 Cr. Structure, function and coordination of human reproductive organ system; reproductive cell formation and function; problems of fertility, sterility, sexuality, birth control and relationship to population challenges. Prerequisite: 308-122 or 308-132. F-W</p>
<p>304-531 Southern Baroque Art 3 Cr. Development of art in Southern Europe from Italian Renaissance to 18th century.</p>	<p>305-402 Introduction to Teaching Art in Elementary Schools 3 Cr. Development of basic knowledge and skills needed to foster and extend creative growth in children. F-W</p>	<p>308-332 Genetics 2 Cr. Fundamental principles of genetics, their functions and applications to plants, animals and man. F-W</p>
<p>304-532 Economics of House Furnishing 3 Cr. Study of consumer house furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to house furnishing markets. F</p>	<p>305-403 Introduction to Teaching Art in Secondary Schools 3 Cr. Development of art principles and practices that expand creative growth and development in secondary school students. F-W</p>	<p>308-333 Genetics Laboratory 1 Cr. Perform genetic crosses to reinforce understanding of principles of heredity; <i>Drosophila</i> (fruit fly) will be primary experimental organism. Experience in test breeding, observing, tabulating and interpreting results, as in actual genetic research. Prerequisite: 308-332 or concurrent registration. F-W</p>
<p>304-533 Period Furnishings 3 Cr. A survey of furniture and furnishings in the western world. F</p>	<p>305-408 Student Teaching in the Elementary School—Art 4 Cr. Directed teaching and community experience in selected off-campus elementary schools. Prerequisites: 305-402 and 305-403. F-W</p>	<p>308-342 Community Hygiene 2 Cr. Disease prevention through education, sanitation, isolation and immunization; public health programs and operation of federal and state laws. F-W-S</p>
<p>304-534 Fashion Illustration 3 Cr. Problems in graphic techniques, fashion illustration, contemporary fashion design and advertising presentation. Prerequisite: 304-101. Repeatable for credit. F-W</p>	<p>305-409 Student Teaching in the Secondary School—Art 4 Cr. Directed teaching and community experience in selected off-campus secondary schools. Prerequisites: 305-402 and 305-403. F-W</p>	<p>308-343 Environmental Education 1-3 Cr. Environmental education for the individual, family, community, and society. Prerequisite: 304-101. F</p>
<p>304-545 Senior Seminar 1 Cr. Professional practice including portfolio and senior exhibition; current ideas and career opportunities within the art profession. Prerequisite: Senior standing in program. S</p>	<p>BIOLOGY</p>	<p>308-344 Environmental Education 1-3 Cr. Environmental education for the individual, family, community, and society. Prerequisite: 304-101. F</p>
<p>304-556 Advanced Art Workshop 1-3 Cr. Selected art concepts, processes and media will vary to serve special student populations. For students familiar with workshop approach or advanced in art program. Credit determined by individual contract. Prerequisite: consent of instructor.</p>	<p>308-122 Biology—An Environmental Approach 3 Cr. Principles of biology: cellular metabolism, heredity and relationships between living organisms and their environments. F-W-S</p>	<p>308-345 Environmental Education 1-3 Cr. Environmental education for the individual, family, community, and society. Prerequisite: 304-101. F</p>
<p>304-590 A Design Problem: Team Approach 3 Cr. Interdisciplinary team approach to design concepts solving specific problems. Results represented by working prototype. Prerequisite: advanced level in individual students to be selected by instructor Repeatable for credit. F-W-S</p>	<p>308-132 Physiology and Anatomy 4 Cr. Basic concepts of physiological processes and anatomy of all organ systems of humans, based on dissection of a cat; embryological development. F-W-S</p>	<p>308-346 Environmental Education 1-3 Cr. Environmental education for the individual, family, community, and society. Prerequisite: 304-101. F</p>
	<p>308-142 Botany 4 Cr. Introduction to structure and function of plants, survey of plant kingdom, and structure and life history of representative forms of plant life. F-W</p>	

308-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

308-350 Ecology 3 Cr. Interrelationships of organisms with their abiotic and biotic environments. Prerequisites: 308-122, concurrent registration, or consent of instructor F-W

308-352 Applied Botanical Practice 3 Cr. Plant care, management, and propagation skills. Prerequisite: 308-142. F-W-S

308-358 Introductory Pharmacology 2 Cr. Fundamental principles of major groups of drugs; actions and interactions in human body. (Some science background recommended). F-W

308-362 Advanced Physiology 3 Cr. Physiological processes: digestion, respiration, metabolism, excretion, circulation and muscle. Histological studies of blood, experiments with frog and turtle hearts, nerve and muscle preparation. Respiratory, nerve, circulatory and muscle experiments on human body. Prerequisite: 308-132. F-W

308-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

308-506 Food Microbiology 3 Cr. Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific groups of economically important microorganisms. Prerequisite: 308-306. F-W

308-650 Neuroanatomy 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. F

308-651 Psychobiology 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. W

CHEMISTRY

311-115 General Chemistry 5 Cr. Fundamental principles of chemistry: structure, compound formation, bonding, reactions, oxidation-reduction, solutions, colloids, equilibrium and acids and bases; demonstration of applications to contemporary problems, environmental effects. Special course fee. F-W-S

311-125 Principles of Chemistry for Health Sciences 5 Cr. Principles of chemistry: general, reaction stoichiometry, equilibrium and thermodynamics. For dietetics, food service administration and other allied health science majors. Special course fee. F

311-135 College Chemistry I 5 Cr. Principles of inorganic chemistry, properties of important elements and compounds. More rigorous approach and more extensive coverage than in 311-115. Normally followed by 311-136. Special course fee. Prerequisite: 355-120 or Placement into 355-121 or above. F-W

311-136 College Chemistry II 5 Cr. Reactions and properties of common elements and inorganic compounds; oxidation-reduction and solution equilibria; electrochemistry. Lab work in qualitative analysis for common ions. Special course fee. Prerequisite: 311-135 or 311-125 or consent of instructor F-W

311-201 Organic Chemistry Lecture 3 Cr. Introduction to chemistry of carbon compounds; characteristic reactions of the several functional groups; also aliphatic and aromatic compounds. Taken concurrently with 311-203. Prerequisite: 311-115 or 311-125 or 311-135. F-W

311-203 Organic Chemistry Laboratory 1 Cr. Lab course to be taken concurrently with 311-201. Special course fee. F-W

311-204 Organic Chemistry II lecture 3 Cr. Basic organic chemistry; organic reaction mechanisms. Taken concurrently with 311-206. Prerequisite: 311-201. W

311-206 Organic Chemistry II laboratory 1 Cr. Lab course to be taken concurrently with 311-204. Special course fee. Prerequisites: 311-201 and 311-203. W

311-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

311-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

311-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

311-501 Physical Chemistry Lecture 3 Cr. Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with 311-503. Recommended: 311-531. Prerequisites: 311-115 or 311-125 or 311-135 and 355-156. F-W

311-511 Biochemistry 4 Cr. Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work in polarimetry, colorimetry, chromatography and quantitative analytical procedures (Kjeldahl determination of protein nitrogen). Special course fee. Prerequisites: 308-132 and 311-201. F-W

311-515 Food Chemistry 3 Cr. Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (Maillard-Browning reaction), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods. Special course fee. Prerequisites: 311-115 or 311-125 or 311-135, 311-201 and 311-203. W

311-521 Textile Chemistry 3 Cr. Chemical and physical properties of monomers and high polymers of following natural and synthetic fibers: cotton, cellulose derivatives, silk, wool, linen, nylon, polyesters, acrylics, olefins and polyurethanes. Lab analysis of textile fibers, textile fiber mixtures and dyestuffs. Physical properties of textiles, synthesis of textile polymers, crease resistance; textile finishing. Special course fee. Prerequisite: 311-115.

311-531 Quantitative Analysis 3 Cr. Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. Special course fee. Prerequisite: 311-115 or 311-135. F

311-535 Instrumental Methods of Analysis 3 Cr. Application of instrumental methods to chemical analysis: electrochemical, spectral; applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Recommended: 311-531. Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. W

311-541 Chemistry of Materials 3 Cr. Practical applications of principles and facts of chemistry to technological problems: structure and properties of common materials; fuels (solid, liquid, gaseous, fossil, nuclear) and air pollution; water (domestic, industrial, sewage) and water pollution; electrical properties (cells, batteries, fuel cells, electrolysis) and corrosion of metals; protective coatings (paints, varnishes, enamels, lacquers, plating, anodizing, cladding). Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. F-W

311-542 Industrial Hygiene 3 Cr. Principles and techniques for recognizing, evaluating, and controlling existing or potential occupational health hazards that affect employee safety and health.

311-553 Environmental Chemistry 3 Cr. Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution and/or are of current importance; chemical technology needed to correct imbalance. Special course fee. Prerequisite: 311-115 or high school chemistry and consent of instructor. F-W

311-612 Advanced Biochemistry 3 Cr. Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids. Prerequisites: 311-201, 311-203 and 311-511. F-W

311-652 Hazardous Waste Management 3 Cr. Management of hazardous wastes; compliance with governmental regulations in recognition, storage, shipping and reporting of hazardous wastes. Special course fee. Prerequisite: 311-652 or consent of instructor F-W-S

ECONOMICS

320-201 General Economics 3 Cr. Introduction to basic elements of economics; analysis of institutions, issues and policy; theories of price, national income and employment. Not open to students taking 320-210 and 320-215. F-W

320-210 Principles of Economics I 3 Cr. Basic economic concepts and economic institutions, national income and employment analysis, business fluctuations, money and banking; monetary fiscal policies. Prerequisite: sophomore standing. F-W-S

320-215 Principles of Economics II 3 Cr. Price theory, income distribution, factor pricing, market mechanisms, functions of economic system, labor and collective bargaining and international economics. Prerequisite: 320-210. F-W-S

320-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

320-325 Economic and Business Statistics 3 Cr. Method of collection, analysis, and presentation of economics, social, and business data. Ratios, frequency distributions, averages, variability, linear regression, correlation, time series analysis, and principles of index numbers. Prerequisite: 355-118, or equivalent. F-W

320-335 Personal Securities Investments 2 Cr. Major aspects of security investments: common and preferred stocks, bonds, mutual funds. Prerequisite: 320-201 or 320-210.

320-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

320-380 Business and Economic Forecasting 3-3 Cr. Survey of macroeconomic and microeconomic forecasting techniques, data collection and analysis.

320-410 Microeconomics 3 Cr. Value and distribution theory; analysis of demand-firm, industry and utility; pricing of production factors. Prerequisite: 320-215. F

320-415 Macroeconomics 3 Cr. Determination of aggregate income, employment, growth rates and price levels; monetary and fiscal policies necessary for full employment. Prerequisite: 320-215. W

320-420 Labor Economics 3 Cr. Basic labor theory; history of organized labor in western industrial societies; collective bargaining as viewed by labor, management, government and public; institutions involved in modern labor relations. Prerequisite: 320-201 or 320-210. F-W-S

320-421 Collective Bargaining and Labor Relations 2 Cr. Introduction to collective bargaining in the U.S.; formation, substance and administration of a labor agreement, current labor law, role of NLRB. Prerequisites: 320-201, 320-210 or consent of instructor. F-W-S

320-435 Money, Banking, and Financial Markets 3 Cr. Money and bank credit, modern monetary theories, monetary policy. Prerequisite: 320-201 or 320-210. F

320-440 Principles of Investment 3 Cr. Principles and techniques of investment for people in business; construction and management of security portfolios. Prerequisite: 160-207. WE

320-445 Public Finance 3 Cr. Public finance at all governmental levels; taxation, expenditures, debt management and fiscal policy. Prerequisite: 320-215. W

320-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

320-470 Economic Model-Building and Forecasting 3 Cr. Quantitative models and methods applied to forecasting; regression techniques. Prerequisites: 320-215, 354-331 and 355-275 or consent of instructor. F

320-480 Principles of International Trade 3 Cr. Theory and practice. Capital movements; foreign exchange rates and controls; balance of payments; tariffs. Prerequisite: 320-215. F-W

320-550 Managerial Economics 3 Cr. Decision-making, demand and cost analysis, competitive and non-competitive price systems, marketing problems, capital budgeting and criteria for investment decisions. Prerequisite: 320-215. F-W

320-610 Contemporary American Economic Problems 3 Cr. Survey of domestic economic problems at advanced level with special emphasis on applications and effects on industry. Prerequisites: graduate standing and three credits in Economics.

320-680 International Trade 3 Cr. Theory and practice of capital movements; foreign exchange rates and controls; balance of payments; tariffs. F-W

ENGLISH AND JOURNALISM

326-090 Writing Workshop 3 Cr. Pass/fail. Remedial writing course open to all students; especially for those who have particular writing problems and need individual instruction. Will not count toward graduation nor fulfill English requirement. F-W

326-101 Freshman English—Composition 3 Cr. Principles and practices of writing; documented paper. Prerequisite: Acceptable score on English Department Placement Exam or a passing grade in 326-090. F-W-S

326-102 Freshman English—Reading and Related Writing 3 Cr. Readings focused on a theme reflected in literature. Topics and approaches developed by each instructor; opportunity for responsible, independent study; requires intensive practice in composition. Prerequisite: 326-101. F-W-S

<p>326-111 Freshman English—Honors I 3 Cr. Readings in world literature and related writing for training in composition techniques; documented paper. Prerequisite: Departmental selection based on ability. F-W</p>	<p>326-345 Creative Writing 3 Cr. All aspects of imaginative writing. Prerequisites: 326-102 or 326-112 and consent of department. Repeatable for credit. F-W</p>	<p>326-401 English Literature 3 Cr. Selected prose and poetry from 1798 to modern times. Prerequisite: 326-102 or 326-112. W</p>
<p>326-112 Freshman English—Honors II 3 Cr. Continuation of 326-111. Prerequisite: 326-101 or 326-111 or departmental selection based on ability. F-W</p>	<p>326-346 Informational Writing 3 Cr. Writing for service organizations, education, the helping professions, the humanities and social sciences. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-402 Concepts of Literary criticism 3 Cr. A systematic approach to literary theory, criticism, and history. The science and art of form and structure as presented by great critics with emphasis on New Criticism. Prerequisites: 326-102, 326-112. F-W-S</p>
<p>326-203 American Poets 3 Cr. Contemporary American writers of narrative, dramatic and lyric poetry. Prerequisite: 326-102 or 326-112.</p>	<p>326-347 Critical Writing 3 Cr. The art of evaluation and judgment; writing critical reviews and articles; documented critical paper. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-406 Shakespeare 3 Cr. Several representative plays and selected criticism. Prerequisite: 326-102 or 326-112. W</p>
<p>326-204 The Short Story 3 Cr. Style, structure, history and development of short story as a literary form. Prerequisite: 326-102 or 326-112. F</p>	<p>326-348 American Literature 3 Cr. American prose and poetry from its beginnings to World War I. Prerequisite: 326-102 or 326-112. F-W-S</p>	<p>326-410 Writing and Selling Feature Articles 2 Cr. Practice in techniques of writing and selling feature articles for appropriate markets; submission of articles for potential publication. Prerequisite: 326-102 or 326-112. F</p>
<p>326-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S</p>	<p>326-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S</p>	<p>326-425 Copy Editing and Preparation 2 Cr. Develop skill in expanding and reducing written materials; experience in copy reading, proofreading, headlines. Prerequisite: consent of instructor. W</p>
<p>326-250 Classical and Biblical Literature in Translation 3 Cr. Selections from Greek, Hebrew and Latin literature. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-350 Modern British Literature 3 Cr. Selected poetry, prose, and fiction produced since World War I. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S</p>
<p>326-286 Detective Fiction 3 Cr. Literary, historical and social implications of detective fiction from its inception to the present. Includes popular writers, literary writers, non-print media and criticism. Prerequisites: 326-102, 326-112, consent of instructor.</p>	<p>326-351 European Literature in Translation 3 Cr. Selected poetry, prose and drama from Dante to present. Prerequisite: 326-102 or 326-112. W</p>	<p>326-450 Studies in Literature (Theme, Author, Genre) 2-3 Cr. Analysis and interpretation of significant genres of American folklore related to historical experience. Field-based research. Prerequisites: 326-102 or 326-112 and three credits of literature or consent of instructor. Repeatable for credit. F-W</p>
<p>326-300 Literature for Young Children 3 Cr. Critical survey of literature for children (birth to age 8); introduction to and directed practice of presentation methods. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-355 Recent World Literature 3 Cr. Selected readings in Contemporary Literature in Translation. Prerequisites: 326-102, 326-112.</p>	<p>326-450 Studies in Literature (Theme, Author, Genre) 2-3 Cr. Analysis and interpretation of significant genres of American folklore related to historical experience. Field-based research. Prerequisites: 326-102 or 326-112 and three credits of literature or consent of instructor. Repeatable for credit. F-W</p>
<p>326-303 The Family in Literature 3 Cr. Literature about the family selected from several historical periods and cultures. Prerequisite: 326-102 or 326-112. F</p>	<p>326-360 Modern American Literature 3 Cr. Selected poetry, prose and drama produced since World War I. Prerequisite: 326-102 or 326-112. F-W-S</p>	<p>326-500 Literature for the Reading Child and Adolescent 3 Cr. Critical survey of literature for children (age 8 to beginning to read adult literature); adolescent literature and media presentations of literature. Prerequisite: 326-102 or 326-112. W</p>
<p>326-306 Reporting and News Writing 3 Cr. Theory and practice of news gathering and reporting; basic techniques of journalistic writing. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-372 Women Writers 3 Cr. Analyze writing of prominent American and British women novelists and poets of 19th and 20th centuries; criticism of women writers. Prerequisite: 326-102 or 326-112. F</p>	<p>326-515 Technical Writing 3 Cr. On-the-job writing for business and industry; reports, letters, and other documents. Prerequisites: 326-102 or 326-112 and junior standing, junior standing F-W-S</p>
<p>326-310 Journalism Practicum 1 Cr. Work on regularly published newspaper and submit articles for evaluation and publication. Prerequisite: Journalism minor or concentration. Repeatable for credit. F-W</p>	<p>326-381 Recent American Literature 3 Cr. American poetry, fiction and drama since 1950. Prerequisite: 326-102 or 326-112. W</p>	<p>326-518 Mass Communication in American Society 3 Cr. History, social implications and future of mass media of communications. Prerequisite: 326-102 or 326-112. F</p>
<p>326-320 Business Writing 3 Cr. Effective techniques for writing persuasively in business communications: requests, cordial contact, sales and education and training programs. Prerequisite: 326-102 or 326-112. F-W</p>	<p>326-385 Science Fiction 3 Cr. Critical survey of popular and classic science fiction. Prerequisite: 326-102 or 326-112.</p>	<p>326-525 Writing Technical Articles 3 Cr. Experience in writing technical articles; requirements for publication in professional media. Research, write and submit individual projects of suitable length and maturity connected with area of specialization. Prerequisites: 326-515 and 326-516 or consent of instructor.</p>

326-535 Writing Technical Manuals 3 Cr. Production of a technical manual—planning procedure, collecting information, analyzing audience, writing and field testing. Prerequisites: 326-101, 326-102, 326-515 or 326-516 or consent of instructor F-W-S

326-537 Technical Writing Practicum 1-3 Cr. Plan, write and produce a technical document for a client. Principles of document design, clear writing for a specific audience, methods of determining client needs, and methods of producing the final document. Prerequisite: 326-515 or 326-516 or equivalent and consent of instructor Repeatable for credit. F-W-S

326-541 Psycholinguistics 3 Cr. Linguistics behavior and psychological processes responsible for it. Prerequisite: 326-102 or 326-112. W

326-546 Research Reporting 3 Cr. Effective organization and presentation of individual research. Prerequisites: 326-102, 326-112. F

326-601 Juvenile Fiction Seminar 1-3 Cr. Children's literature, emphasizing the picture book. Methods of selecting and reading picture books of all types with critical examination. Literary, historical and social implications of picture books. Prerequisites: 326-300 or 326-500, senior standing or consent of instructor.

FRENCH

328-100 Menu French 1 Cr. Pronunciation of food items and menu terms. Vocabulary comprehension. Basic phrases for haute cuisine and for ordering food in a restaurant. Reading recipes in French. F-W-S

328-101 Elementary French I 4 Cr. Introduction to basic audio-lingual skills, essentials of grammar and reading for comprehension. Supplementary materials drawn from cultural heritage of France. Minimum of 1 laboratory hour required. F

328-102 Elementary French II 4 Cr. Continuation of 328-101. A minimum of 1 laboratory hour required. Prerequisite: 328-101. W

328-201 Intermediate French I 4 Cr. Grammar review, vocabulary improvement, oral practice, original composition, and readings that stress French civilization and literature. Minimum of 1 laboratory hour required. Prerequisite: 328-102 or two years of high school French. F

328-202 Intermediate French II 4 Cr. Continuation of 328-201. Minimum of 1 laboratory hour required. Prerequisite: 328-201. W

SPANISH

329-100 Basic Spanish 1 Cr. Pronunciation, basic phrases for everyday situations, comprehension of short written and spoken sentences, brief grammar summary, limited vocabulary.

329-103 Elementary Spanish I 4 Cr. Introduction to conversational Spanish as spoken today in Mexico and South America. F-W

329-104 Elementary Spanish II 4 Cr. Continuation of 329-103. Conversational Spanish as spoken today in Mexico and South America. Prerequisite: 329-103. W

329-121 Practical Spanish I 2 Cr. Pronunciation, basic phrases for everyday situations, comprehension of short written and spoken sentences, basic grammar summary, introductory vocabulary with program-specific modules, cross-cultural topics. Not open to students who have completed Spanish 103. F-W-S

329-122 Practical Spanish II 2 Cr. Elementary vocabulary, conversational phrases, Hispanic culture, present and past tense verbs, object pronouns, choice of career-related language supplements. Not open to students who have completed Spanish 103. Prerequisites: 329-121, one semester of high school Spanish F-W-S

329-201 Intermediate Spanish I 4 Cr. Extensive development of vocabulary including common idioms, aural comprehension, correct pronunciation, recognition of verb tenses in written Spanish. Readings based on contemporary life in Hispanic countries. Listening practice with authentic recorded materials. Prerequisites: 329-104, two years of high school Spanish F-W-S

329-202 Intermediate Spanish II 4 Cr. Complete grammar review of standard Spanish, applicable to both conversational situations and business or personal correspondence. Review of essential vocabulary and phrases. Accuracy and fluency in spontaneous conversation and free composition. Prerequisites: 329-201, three years of high school Spanish F-W-S

CHINESE

330-121 Mandarin Chinese IA 2 Cr. Mandarin Chinese IA. Basic Chinese vocabulary and conversational phrases. Accuracy and fluency in guided conversation. Emphasis on correct pronunciation. Written materials use Romanized alphabet. F-W-CB

330-122 Mandarin Chinese IB 2 Cr. Mandarin Chinese IB. (Continuation of introduction to spoken Mandarin Chinese.) Vocabulary and conversational phrases. Accuracy and fluency in guided conversation. Brief exposure to written characters. Prerequisite: 330-121 or Permission of course coordinator F-W-CB

GEOGRAPHY

336-104 World Geography 3 Cr. Introduction to regional and cultural geography of the world; physical and human resources of major areas of the globe. F

336-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

336-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

336-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

HISTORY

338-105 History of America 3 Cr. Survey of U.S. history. Not open to those taking the 22-credit minor nor to those who have completed 338-120 or 338-121. F-W

338-120 Early United States History 3 Cr. U.S. history to 1865: political, economic and social forces that have shaped the nation to close of Civil War. Not open to those who have completed 338-220. F-W

338-121 Modern United States History 3 Cr. U.S. history since 1865: political, economic and social forces that have shaped the nation since close of Civil War. Not open to those who have completed 338-105. F-W-S

338-140 Western Civilization 3 Cr. Survey of Western civilization along the Nile, the Fertile Crescent, through Greece, Rome, the Middle Ages, the Renaissance, and the Reformation. F

338-141 Western Civilization 3 Cr. Survey of Western civilization from Reformation to present. W

338-210 Modern World 3 Cr. Modern trends in terms of historical backgrounds as frame of reference for interpreting modern world. F-W-S

338-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

338-320 History of Russia 3 Cr. Survey of Russia's historical development since 862. F

338-325 Recent History of the United States 2 Cr. U.S. history in 20th century; recent world development in which U.S. has played a part.

338-330 History of World War II 3 Cr. Causes, conduct and effects of World War II. F-W

338-340 English History 3 Cr. Social, political, religious, military and economic history of Great Britain from Restoration (1660) to modern times. F

338-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

338-360 Asian History 3 Cr. Survey of political, social, religious and economic history of Asia, India, China, Japan and the Philippines in modern world. W

338-380 Latin American History 3 Cr. Political, social and economic history of Middle and South America, pre-Columbian to present. W

338-410 Biography of World Leaders 2-3 Cr. Readings in biographies and autobiographies of modern world leaders. S

338-430 Western U.S. History—The Trans-Mississippi West 3 Cr. Development of trans-Mississippi West in 19th century: exploration, missionaries, settlement, fur trade, Indian problems, slavery, admission of new states, mining and cattle industries, agriculture, transportation, communication, culture and land policies.

338-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor and dept chair F-W-S

APPLIED MATHEMATICS

354-X98 Computer Science Field Experience 2 Cr. Off-campus work and study in approved position to better understand challenges and potentials of various careers related to computers. F-W

354-130 Elementary Statistics 2 Cr. Organization and presentation of data, computation of descriptive statistics, regression and correlation theory and computation; elementary sampling theory; introduction to normal and binomial distributions, tests of hypotheses. One year of high school algebra is desirable. F-W-S

354-140 Computer Concepts 2 Cr. Introduction to computing; history of computers, hardware, software and terminology; components and functions of computers; programming concepts and basic applications; running programs written by others; writing programs in BASIC time-sharing language. F-W-S

354-141 Digital Computer Programming 2 Cr. Introduction to computer systems and their use; translating language, program writing and debugging. F-W-S

354-142 Computer Applications in Business 4 Cr. Basic characteristics of business data processing systems, especially computers; hardware and software concepts, data flow and systems design and introduction to business-oriented programming. Not open to those with credit in 300-101. F-W

354-144 Computer Science I 3 Cr. Problem-solving and algorithm development using a high-level programming language. Computer organization, programming language and programming, elements of programming style, documentation, introduction to structured programming

354-145 Computer Science II 3 Cr. Problem-solving and algorithm development using a high-level language. Structured programming concepts, debugging and testing, string processing, searching and sorting, elementary data structures, recursion and files. Prerequisite: 354-144.

354-240 Intermediate Computer Programming 3 Cr. Continuation of 354-141: subprograms, plotter output, disk I/O and advanced FORTRAN techniques. Introduction to machine and assembly language programming. Prerequisite: 354-141. F-W

354-241 Assembly Language Programming 3 Cr. Basic concepts in computer systems including computer structure, machine language, assembly languages, addressing techniques, macros, file I/O, program segmentation and linkage. Prerequisites: 354-145 or 354-240, Or equivalent. F-W

354-245 Numerical Methods 2 Cr. Computer programming and numerical methods for solution of equations, simultaneous equations, interpolation, numerical differentiation and integration and statistical analysis. Prerequisites: 355-141 and 355-153 or 355-156. F-W

MATHEMATICS

354-246 Computer Programming—Cobol 3 Cr. Introduction to computer systems and their use; development of programming practices and techniques, flowcharting, and application through business-oriented translating language. Prerequisite: 354-141. F-W

354-331 Probability and Mathematical Statistics I 3 Cr. Sets and combinatorial analysis, probability in discrete sample spaces, Bayes' rule, random variables and probability distributions, change of variable, marginal and conditional distributions, expectation, moments and moment generating functions, Chebyshev's theorem, central limit theorem. Prerequisite: 355-153 or 355-156. F

354-332 Probability and Mathematical Statistics II 3 Cr. Sampling distributions, order statistics, introduction to decision theory, estimation, hypothesis testing, nonparametric methods, regression and correlation, analysis of variance. Prerequisites: 355-154 or 355-157 and 354-331. W

354-341 Data Structures 3 Cr. Review of set theory, functions and relations; basic concepts of data; lists, strings and arrays; representation of graphs and trees; storage systems and structures; symbol tables and searching techniques; sorting (ordering) techniques. Prerequisites: 354-240, 355-275 110-556. F-W

354-343 Mathematical Foundations of Computer Graphics 3 Cr. Fundamental hardware, software, mathematics, data structures and algorithms for computer graphics. Prerequisites: 354-241, 354-341, 355-158, 355-275. F-W-S

354-441 Computer Architecture and Operating Systems I 3 Cr. Architecture of computer systems: hardware component layouts and software systems design and their interrelationships. Prerequisites: 354-141 and 354-241. F

354-442 Computer Architecture and Operating Systems II 3 Cr. I/O control and file systems, memory and processor management, data base management systems and their interrelationships. Prerequisites: 354-141 and 354-241. W

354-445 Numerical Analysis 3 Cr. Mathematical theory supporting numerical methods of computer programming for solution of equations, simultaneous equations, numerical differentiation and integration, and approximation procedures. Prerequisites: 354-245, 355-255 and 355-275. F-W

354-446 Numerical Analysis I 3 Cr. Theory and applications of numerical methods for linear algebra, non-linear equations and polynomial interpolation. Prerequisites: 355-158, 355-275, 354-145 or 354-240, Or equivalent.

354-447 Numerical Analysis II 3 Cr. Theory and applications of numerical methods for approximation, numerical integration and differentiation, differential equations, and Fourier analysis. Prerequisites: 354-446, 355-255.

354-448 Software Engineering 3 Cr. Software development lifecycle, programming languages and environments, program testing, documentation, software management and organization. Class software development project. Prerequisites: 354-341, 354-145 or Consent of instructor F-W-S

354-475 Applied Mathematics Internship 2-8 Cr. Off-campus work and study in approved position to gain experience in using computer and/or statistical techniques in the analysis and solution of real-world problems. Interns receive salaried appointments with cooperating companies for summer or summer plus one semester. Prerequisite: junior standing. F-W-S

354-490 Mathematical Models I 2 Cr. Supervised experiences in construction of mathematical models for the solution of problems in area of student's needs and interests; resource materials. Prerequisite: Senior standing in Applied Mathematics. F

354-491 Mathematical Models II 2 Cr. Continuation of 354-490. Prerequisite: 354-490. W

354-530 Statistical Methods 3 Cr. Histograms, mean and standard deviation, combinatorics, probability; binomial, hypergeometric, normal, chi-square, T and F distributions and their uses; statistical inference; contingency tables, linear models, analysis of variance with appropriate applications. Prerequisites: 355-120, or equivalent and three years of high school math. F-W-S

354-531 Design of Experiments I 2 Cr. Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. Prerequisite: 354-332 or consent of instructor. F

354-532 Design of Experiments II 2 Cr. Fixed-effect, random-effect and mixed models; nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of covariance, response surfaces, sequential analysis. Prerequisite: 354-531. W

354-535 Applied Stochastic Processes I 2 Cr. Stochastic processes, Markov chains, stationary distributions, construction of Markov processes, Poisson and birth and death processes, review of statistical inference as applied to these processes. Prerequisites: 354-332 or 354-530 and consent of instructor.

354-536 Applied Stochastic Processes II 2 Cr. Application of topics introduced in 354-535: theory of reliability; branching, social and behavioral, and queueing processes. Prerequisite: 354-535.

354-590 Topics 1-3 Cr. Topics of current importance in applications of mathematics to problems in business, industry, government or society. May be repeated for additional credit with consent of program director. S

354-640 Computer Use in Education 3 Cr. Computer use in administrative, research and instructional aspects of education. S

355-010 Fundamentals of Algebra 2 Cr. Review of fundamental principles of elementary algebra. Credit earned for Mathematics 010 will not count toward graduation. F-W

355-118 Concepts of Mathematics 4 Cr. Elementary concepts in mathematical language and reasoning, sets, number systems and theory, algebraic equations, statistics and probability, geometry, computers; historical survey. Prerequisite: Minimum of one year high school algebra. F-W-SE

355-119 Business Mathematics 4 Cr. Review of arithmetic and basic algebra; simple and compound interest, inventory control and purchase planning; applications to retailing, marketing, accounting, finance, consumerism and insurance. F-W-SO

355-120 Introductory College Mathematics I 4 Cr. Set theory, logic and methods of proof, number systems and equations, use of time-shared computer, vectors, matrices and inequalities. Prerequisite: Demonstrated proficiency. F-W-S

355-121 Introductory College Mathematics II 4 Cr. Open sentences; relations and functions; algebra of trigonometric, exponential and logarithmic functions. Prerequisite: 355-120. F-W

355-123 Finite Mathematics With Applications 4 Cr. Real number system, systems of linear equations and inequalities, sets, functions, vectors, matrices, probability, linear programming, theory of games, Markov chains. Prerequisite: 355-120 or consent of the department.

355-152 Calculus for Management and the Social Sciences 4 Cr. Basic concepts of calculus with applications in the managerial and social sciences. Prerequisites: 355-123, This course is not equivalent to 355-153 CALCULUS I nor is it a suitable prerequisite for 355-154 CALCULUS II F-W-S

355-153 Calculus I 4 Cr. Functions, limits, continuity, bounds, sets; the derivative of functions and applications; exponential, logarithmic, trigonometric and inverse functions. Not open to those with credit in 355-154, 355-156, 355-157 or 355-158. Prerequisite: 355-121, or equivalent. F-W-S

355-154 Calculus II 4 Cr. Continuation of 355-153: antiderivatives; integration theory and techniques, applications; parametric equations, vectors. Prerequisite: 355-153. F-W

355-156 Calculus and Analytic Geometry I 5 Cr. Review of real numbers, inequalities, absolute values, intervals and continuity; analytic geometry of the plane, limit concepts, derivatives of algebraic functions, definite integral. Not open to those with credit in 355-153, 355-154 or 355-157. Prerequisite: Demonstrated proficiency. F

355-157 Calculus and Analytic Geometry II 5 Cr. Application of derivative and definite integral; conic sections and other algebraic curves; calculus for rational, algebraic, circular, exponential and trigonometric functions; formal integration. Prerequisite: 355-156. W

355-158 Calculus III 3 Cr. Formal integration continued; parametric equations, polar representation, Cauchy's formula, Taylor's theorem, infinite series, vectors, partial differentiation, multiple integration. Prerequisite: 355-154 or 355-157. F-W

355-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entailing recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

355-255 Differential Equations 3 Cr. Common types of ordinary differential equations of first and second order; linear equations with constant coefficients; series solutions, numerical approximations, systems of ordinary equations. Prerequisites: 355-154 or 355-157 and 354-141 or concurrent registration. F-W

355-262 Modern Geometry 3 Cr. Development of logical discourse, betweenness properties and plane separation, geometric models of axiomatic systems, modern geometry of triangle and circle, transformations (linear, circular), orthogonal systems of circles, elliptic and hyperbolic geometry. Prerequisite: 355-153 or 355-156. WO

355-275 Linear Algebra 3 Cr. Algebra of linear transformations and matrices. Determinants, equivalence relations, rank systems of equations, vector spaces, orthogonal transformations, characteristic equations and quadratic forms. Prerequisite: 355-153 or 355-156. F-W

355-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent on instructor or dept chair F-W-S

355-350 Vector Analysis 3 Cr. Basic theory of vectors. Vector differential calculus and vector integral calculus of two and three dimensions with applications. Prerequisite: 355-158. F-W-S

355-370 Modern Algebra I 3 Cr. Set theory, mappings, equivalence relations and classes, mathematical induction, Peano's postulates, isomorphisms; development of natural numbers, integers, rational, and real numbers; introduction to integral domains and rings. Prerequisite: 355-154 or 355-157. F

355-371 Modern Algebra II 3 Cr. Continuation of 355-370; rings, integral domains, fields, polynomials, groups, vector spaces; introduction to algebra of matrices. Prerequisite: 355-370. W

355-449 Cooperative Education Program in Liberal Studies 8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

355-450 Real Analysis I 3 Cr. Rigorous development of advanced topics in analysis; functions, real numbers, sequences, Cartesian spaces, sequences of functions, limit superior and inferior, continuous functions. Prerequisite: 355-154 or 355-157. F

355-451 Real Analysis II 3 Cr. Continuation of 355-450; differentiation, integration, infinite series. Prerequisite: 355-450. W

355-460 Complex Variables With Applications 3 Cr. Complex numbers, analytic functions, elementary functions of complex variables, mapping of elementary functions, integration techniques, power series and calculus of residues. Prerequisite: 355-255. WE

MUSIC

360-101 Class Piano I 1 Cr. Group instruction in piano technique and repertoire at beginner level. One 1-hour lesson per week; additional practice time required. F-W

360-102 Class Voice I 1 Cr. Group instruction in vocal technique and repertoire; small ensemble performance. Optional recital. Repeatable for credit. F-W

360-103 Class Guitar I 1 Cr. Group instruction in guitar technique and repertoire at beginner level. One 1-hour lesson per week; additional practice time required. F-W

360-111 Advanced Piano I 1 Cr. Private instruction in piano technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. F-W

360-112 Advanced Voice I 1 Cr. Private instruction in vocal technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. F-W

360-130 Music Appreciation 2 Cr. Music materials as they pertain to perceptive listening; music and musicians from medieval times to present; students gain significant awareness of great music. F-W-S

360-201 Class Piano II 1 Cr. Continuation of 360-101 at intermediate level. One 1-hour lesson per week; additional practice time required. F-W

360-203 Class Guitar II 1 Cr. Continuation of 360-103 at intermediate level. One 1-hour lesson per week; additional practice time required. F-W

360-204 Music for the Young Child 3 Cr. Music fundamentals; individual and group instruction and performance on Orff instruments and autoharp; repertoire for preschool classroom music. F-W

360-211 Advanced Piano II 1 Cr. Continuation of 360-111. F-W

360-212 Advanced Voice II 1 Cr. Continuation of 360-112. F-W

360-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

360-264 Stage Band 1 Cr. Study and perform music of the large dance band. Open to any qualified Stout student, by audition only. Repeatable for credit. F-W

360-265 College Choir 1 Cr. Advanced choral techniques, reading and analysis of choral music of all types and periods. Concert and radio appearances. Repeatable for credit. F-W

360-266 Stout Concert Band 1 Cr. Fundamentals of musical expression, tone production and quality, and special problems of technique. Membership by audition only. Repeatable for credit. F-W

360-267 Stout Symphonic Singers 1 Cr. Advanced choral techniques, reading and analysis of choral music of all types and periods. Membership by audition only. Repeatable for credit. F-W

360-268 Solo and Ensemble 1 Cr. Coaching of advanced vocal and instrumental performers for public performance. Repeatable for credit. F-W

360-269 Chamber Singers 1 Cr. Study and performance of music for small vocal ensemble; repertoire is balanced selection from all major stylistic periods. Repeatable for credit. F-W

360-270 Vocal Jazz Ensemble 1 Cr. Performance of vocal jazz in a select choral ensemble. Membership by audition only. **SPECIAL CONSIDERATION:** Repeatable for credit with new music each semester. Students selected by instructor.

360-303 Class Guitar III 1 Cr. Continuation of 360-203. F-W

360-311 Advanced Piano III 1 Cr. Continuation of 360-211. Repeatable for credit. F-W

360-312 Advanced Voice III 1 Cr. Continuation of 360-212. Repeatable for credit. F-W

360-349 Cooperative Education Programs in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

360-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

PHILOSOPHY

365-201 **Introduction to Philosophy** 3 Cr. Introduction to the principal problem areas and history of philosophy, as well as to the nature of philosophical investigation. F-W

365-301 **Introduction to Logic** 3 Cr. Problem-solving strategies based on induction and on categorical and propositional deduction. F-W

365-305 **Philosophy of Religion** 3 Cr. Principal philosophical problems in the various dimensions of religious experience and belief. Prerequisite: sophomore standing. F

365-315 **Eastern Philosophy** 3 Cr. Philosophies of India, China and Japan: Hinduism, Buddhism, Confucianism, Taoism and Zen Buddhism. Prerequisite: sophomore standing. W

365-325 **Existentialist Philosophers** 3 Cr. Impact of major Existentialist philosophers on contemporary thought and values.

365-375 **Personal and Professional Ethics** 3 Cr. Ethical valuing process and major ethical standards applied to personal and professional life. F-W

365-510 **Philosophy Seminar** 2-4 Cr. Selected topics in philosophy including works of individual philosophers, thematic problems in history of philosophy, issues in contemporary philosophy, or relations of philosophy to contemporary problems in other areas. Prerequisites: consent of instructor and basic course in philosophy, logic or ethics. Repeatable for credit.

PHYSICAL EDUCATION

366-101 **Health Survey** 1 Cr. Relationship of personal health to the whole person; to develop an awareness of high level wellness and how life style relates to health. F-W

366-102 **Personal Health** 2 Cr. Prevention and care of significant physiological and sociological effects of selected personal health problems in our society. F-W

366-249 **Cooperative Education Program in Liberal Studies** 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entailing recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

366-340 **Arc Standard First Aid and Personal Safety** 2 Cr. American Red Cross certification in Standard First Aid and Personal Safety; increase personal safety and accident-prevention knowledge; learn to administer emergency first aid to self or others. F-W-S

366-346 **Arc Cardiopulmonary Resuscitation** .5 Cr. Techniques of basic life support: recognizing respiratory and/or cardiac arrest and properly administering cardiopulmonary resuscitation (CPR) to maintain life. Successful completion results in 1-year certification in ARC Basic Life Support course in CPR. F-W-S

366-349 **Cooperative Education Program in Liberal Studies** 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

366-350 **Prevention and Care of Athletic Injuries** 2 Cr. Provides prospective physical education and/or coaching professional with basic understanding of prevention, treatment and care of athletic injuries. Prerequisite: 366-340. F

366-355 **Kinesiology** 3 Cr. Body movements and principles affecting them. Prerequisite: 308-132. F

366-365 **Physiology of Exercise** 3 Cr. Effects of exercise on sports participants: heat stress, body composition, nutrition, cardiovascular function, energy expenditure, respiratory mechanics and ventilation factors. Prerequisite: 308-132. W

366-449 **Cooperative Education Program in Liberal Studies** 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

367-101 **Aerobic Dance** .5 Cr. Developing fitness through aerobic dance. F-W

367-103 **Archery/Beginning** .5 Cr. F-W

367-105 **Bow Hunting** 1 Cr. Conservation, safety, selection and care of equipment; techniques and practical bow hunting experience. Special course fee. Prerequisite: 367-103, or equivalent. F

367-107 **Badminton** .5 Cr. F-W

367-109 **Basketball** .5 Cr. Repeatable for credit. F

367-113 **Bowling** .5 Cr. Special course fee. F-W

367-115 **Canoe Techniques** 1 Cr. Special course fee. F-W

367-121 **Exercise and Fitness** 1 Cr. F-W-S

367-125 **Flag Football** .5 Cr.

367-126 **Football** .5 Cr. Repeatable for credit. F

367-130 **Golf/Beginning** .5 Cr. Special course fee. F-W

367-131 **Golf/Intermediate** .5 Cr. Special course fee. Repeatable for credit. F-W

367-135 **Jogging** .5 Cr. The philosophy, principles and skills of jogging as an exercise and health program. F-W

367-136 **Karate** .5 Cr. F-W

367-138 **Interpretive Dance** .5 Cr. F

367-140 **Orienteering** 1 Cr. Special course fee. F

367-142 **Outdoor Skills** 1 Cr. Special course fee. F-W

367-144 **Personal Defense** 1 Cr. Development of physical fitness for defense consciousness; techniques of initial and basic defense skills in weapon and rape attacks. F-W-S

367-146 **Racquetball** .5 Cr. Special course fee. F-W

367-148 **Relaxation** .5 Cr. F-W

367-149 **Riding-Beginning Western** .5 Cr. Western horsemanship: basic body position and control at the walk, trot and lope. Special course fee.

367-150 **Riding-Beginning English** .5 Cr. Special course fee. F-W

367-151 **Riding-Intermediate English** .5 Cr. English riding skills: serpentines and figure eights at advanced gaits, simple lead changes, side pass and turns on the forehead and haunches. Special course fee. Prerequisite: 367-150 or consent of instructor.

367-152 **Skiing** .5 Cr. Special course fee. W

367-153 **Skiing—Cross Country** 1 Cr. Selection of equipment, waxing; flatland, uphill and downhill techniques and touring experiences in Nordic skills. Special course fee. W

367-154 **Social Dance** .5 Cr. F-W

367-159 **Softball** .5 Cr. Repeatable for credit. W

367-163 **Swimming/Beginning** .5 Cr. F-W

367-164 **Swimming/Advanced Beginning** .5 Cr. F-W

367-165 **Swimming/Intermediate** .5 Cr. F-W

367-172 **Water Games** .5 Cr.

367-173 **Skin and Scuba Diving** 1 Cr. Special course fee. F-W-S

367-176 **Tennis/Beginning** .5 Cr. F-W-S

367-177 **Tennis/Intermediate** .5 Cr. Repeatable for credit. F-W-S

367-180 **Track and Field** .5 Cr. Repeatable for credit. W

367-182 **Tumbling** 1 Cr. Lab course to develop tumbling skills: forward, backward and sideways rotational, springing and vaulting movements from hands and feet; basic to advanced aerial tumbling. W

367-185 **Volleyball** .5 Cr. Repeatable for credit. F-W

367-187 **Weight Training** 1 Cr. F-W-S

367-189 **Wrestling** .5 Cr. Repeatable for credit. W

367-241 **Advanced Lifesaving** 1 Cr. Red Cross training program in knowledge and skills needed to save one's own or another's life in an emergency. Prerequisite: ARC Swimmers level. F

367-260 **Recreational Golf** 1 Cr. Fundamental principles of golf; skills, history, etiquette and application of techniques. Required: play 27 holes of golf, pay greens fees, furnish 3 golf balls for class use. Special course fee. S

367-265 **Physical Activities for Preschool Children** 2 Cr. Sequential development of physical perceptual skills in children, birth to age 5; perceptual motor activities that promote development. F-W

367-325 **Recreational Leadership** 2 Cr. Objectives, principles, methods and content of a recreational program; problems of facilities, equipment and leadership; program organization and administration for various age levels. F

367-340 **Camp Leadership** 2 Cr. Role of camp counselors in relation to objectives, organization, guidance, leadership skills and program resources in organized camps; practice in camp-craft skills. W

367-342 **Water Safety Instructor** 2 Cr. ARC training course. Teaching and testing of swimming, lifesaving skills and knowledge of water safety; theoretical and practical knowledge and assistance in teaching of Red Cross lifesaving and water safety courses. Prerequisite: 367-241. W

367-345 **Basketball Officiating** 1 Cr. Rules and officiating techniques for men's and women's basketball; preparation for DGWS and/or WIAA officiating certifications. Prerequisite: 367-255 or consent of instructor. F

367-346 **Football Officiating** 1 Cr. Application of football officiating rules and techniques. Prerequisite: consent of instructor. F

367-347 **Wrestling Officiating** 1 Cr. Rules and techniques of wrestling officiating. F

367-350 **Principles of Physical Education and Athletics** 2 Cr. Principles of physical education based on scientific facts and educational ideals; aims and objectives of physical education at various school levels. W

367-360 **Problems in Athletics** 2 Cr. Identification, interpretation and discovery of solutions for problem areas in athletics: human relationships, intellectual strategies, competitive unity, sex discrimination and sport characteristics. W

367-401 **Coaching Gymnastics** 2 Cr. Elements of gymnastic tumbling and use of gymnastic apparatus as part of a modern physical education program. W

367-450 **Organization/Administration of Physical Education** 2 Cr. Everyday problems encountered by physical education instructors, relationship of physical education to general education, objectives of physical education; utilization, planning and care of facilities and equipment; time allotment, classification of activities and children, leadership, organization, supervision, routine procedures. F

367-460 **Coaching Basketball** 2 Cr. Fundamentals and methods of teaching and coaching basketball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-461 **Coaching Football** 2 Cr. Fundamentals and methods of teaching and coaching football, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. F

367-465 **Coaching Competitive Swimming** 2 Cr. Principles and techniques of coaching competitive swimming. Prerequisite: WSI or one year of competitive swimming. W

367-470 **Coaching Baseball** 2 Cr. Fundamentals and methods of teaching and coaching baseball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-471 **Coaching Track and Field** 2 Cr. Fundamentals and methods of teaching and coaching track and field, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W

367-478 **Coaching and Officiating Volleyball** 2 Cr. Skills and techniques of coaching and officiating competitive volleyball. Prerequisite: 367-185 or one year competitive volleyball. F

367-480 **Coaching Youth Athletes** 2 Cr. Coaching strategies for organized non-varsity youth sports programs—philosophy, psychology, physiology, pedagogy, prevention and care of injuries, and legalities. F-W-S

367-490 **Practicum in Coaching** 1-3 Cr. On- or off-campus work and study in athletic coaching with competitive teams. Prerequisite: completion of coaching course in area of practicum. F-W

PHYSICS

372-211 **Introduction to Physics** 3 Cr. Introduction to principles of physics, including mechanics, fluids, heat and thermodynamics, light and sound, electricity and magnetism; their applications to specific technologies. Prerequisite: 355-120. F

372-212 **Introduction to Physics: Lab** 1 Cr. Measurement, analysis and presentation of laboratory data on basic physics concepts, including mechanics, fluids, heat, electricity, light and sound. Prerequisite: 372-211. F-W-S

372-221 **Mechanics and Electricity** 5 Cr. Concepts of mechanics: linear, circular, and trajectory motion, energy, momentum, and rotation; and electricity: static, current, magnetism, and induced EMF's. Prerequisites: 355-121, or equivalent and math skills test. F-W-S

372-222 **Heat and Thermodynamics** 2 Cr. Concepts of temperature and heat, temperature-dependent properties and processes, heat transfer; laws relating heat and other forms of energy. Prerequisite: 372-221. F-W-S

372-223 **Light and Sound** 3 Cr. Concepts of light, sound, and waves: sound, acoustics, geometric optics, optical instruments, interference, polarization, lasers, and holograph. Prerequisite: 372-221. F-W-S

372-231 **General Physics I** 4 Cr. Algebra- and Trigonometry-based general physics course: mechanics and sound with laboratory. Special course fee. Prerequisites: 355-121, a math pre-test F-W-S

372-232 **General Physics II** 4 Cr. Algebra- and Trigonometry-based general physics course: electricity and light with laboratory. Special course fee. Prerequisite: 372-231. F-W-S

372-241 **College Physics I** 5 Cr. Calculus-based general physics course: mechanics and thermodynamics with laboratory. Special course fee. Prerequisites: 355-153 or 355-156, a math pre-test F-W-S

372-242 **College Physics II** 5 Cr. Calculus-based general physics course: electricity, sound, light and selected topics in modern physics with laboratory. Special course fee. Prerequisite: 372-241. F-W-S

372-249 **Cooperative Education Program in Liberal Studies** 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

372-251 Topics in Astronomy 1 Cr. Qualitative analysis emphasizing physical principles of selected topics in astronomy. Significance of modern methods of obtaining astronomical information. F

372-252 Laser Light and Waves 1 Cr. Wave properties of laser light; interference and diffraction as general properties of waves; importance of interference and diffraction effects in laser light; holography and other applications of laser light. W

372-254 Earth Physics 1 Cr. Physical processes that determine properties of the earth: rock formation, mountain building, earthquakes, weather effects and other geologic topics in framework of physics. F

372-261 Science of High Fidelity and Music 2 Cr. Application of principles of physics to musical sounds, musical instruments, and the production and high fidelity reproduction of music. F

372-281 University Physics I 5 Cr. Calculus-based general physics course: mechanics and thermodynamics with laboratory. Special course fee. Prerequisites: 355-154 or 355-157 or concurrent registration, Math pretest. W

372-282 University Physics II 5 Cr. Calculus-based general physics course: electricity, sound, light, and selected topics in modern physics with laboratory. Special course fee. Prerequisite: 372-281. F

372-325 Strength of Materials 3 Cr. Fundamental theory of strength of materials. Analysis of tension, compression, shear, biaxial tension and compression, torsion, stresses and deflection of beams. Prerequisites: 372-221 and 355-153 or 355-156. F-W-S

372-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

372-355 Optoelectronics 3 Cr. Devices that utilize principles of electronics for the production or detection of light. Optical communication systems will also be considered. Prerequisites: 372-223, 110-240 or 110-244. W

372-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

372-467 Mathematical Physics 3 Cr. Methods of solving boundary value problems; Fourier series and integrals; and orthogonal functions. Prerequisites: 355-255 and 372-537. F

372-518 Microprocessors and Applications 3 Cr. Equipment, interfacing and programming for microprocessor systems. Prerequisite: Ten credits in lab-based physics or electronics and two credits in computer programming. F-W

372-519 Advanced Microprocessor Laboratory 3 Cr. Advanced project: design, construction, and trouble-shooting of a functioning microprocessor system. Prerequisites: 372-518 and consent of instructor.

372-527 Solid State Physics 3 Cr. Crystalline structure, lattice vibration and energy states, Brillouin zones, electrons in metals, semi-conductors, and dielectric and magnetic properties of solids. Prerequisites: 372-282 or 372-242 and 355-157 or 355-154. W

372-529 Atomic and Nuclear Physics 3 Cr. Elements of atomic and nuclear physics. Prerequisites: 372-223 and 355-153. F

372-531 Statics 3 Cr. Essential elements of statics: simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces, trusses and other structures. Prerequisites: 354-141, 355-153 and 372-221. F

372-533 Dynamics 3 Cr. Essential elements of dynamics: rectilinear, angular and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. Prerequisite: 372-531. W

372-535 Optics 3 Cr. Optics with emphasis on the wave nature of light: interference, diffraction, polarization, and coherence; their applications in holography. Prerequisites: 372-223, one year of calculus. W

372-537 Electricity and Magnetism 3 Cr. Properties of electric and magnetic fields in free space and material media. Prerequisites: 372-221 or 355-154, concurrent registration. F

POLITICAL SCIENCE

375-210 Government 3 Cr. Functioning of governmental units in the U.S.A. Political principles, processes, problems; constitutional principles. Comparison of selected foreign governments. F-W-S

375-220 State and Local Government 3 Cr. State and local governments within U.S. federal system. Recommended: 375-210.

375-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

375-260 Problems of American Foreign Policy 3 Cr. Analysis of U.S. foreign policy objectives and decision making; problems of national defense, Third World relationships, economic and resource policies, Presidential/Congressional authority, intelligence operations and public opinion.

375-310 Political Parties and Pressure Groups 3 Cr. Analysis of modern political parties. Nominating methods, campaigns, elections. Practical politics in legislative bodies; machines and bosses. Prerequisite: 375-210.

375-340 International Relations 3 Cr. World survey of conditions determining power relationships: balance of power, collective security and deterrence; role of international organizations in world politics.

375-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

375-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

375-510 Public Policy Analysis 3 Cr. Analysis of origins of public policy and policy-making process. Specific case studies of public policy. Prerequisite: 375-210 or consent of instructor. W

375-550 Politics and Technology 3 Cr. Contemporary and future technological innovations; relationship between political institutions and promotion, regulation and impact of industry and technology in the U.S. and other selected countries. Prerequisite: junior standing or senior standing. F

SOCIOLOGY/SOCIAL WORK

387-110 Introductory Sociology 3 Cr. Social interaction in human groups; relationships between individual and group; basic institutions; social change and current trends. F-W-S

391-232 Introduction to the Theater 3 Cr. Development of theater arts from ancient times to present; play styles, production methods and audience appreciation; representative plays. F-W

391-236 Listening 2 Cr. Theoretical analysis and practical application of listening concepts. Emphasis on assessment of individual listening skills and methods of improving personal listening techniques used in occupational and personal relationships. Prerequisite: 391-100.

391-244 Radio Programming and Production 3 Cr. Planning, writing and producing various types of on-the-air experiences. Programs may be broadcast from university radio station. Prerequisite: 391-100. F-W

391-249 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

391-310 Introduction to Speech Correction 2 Cr. Nature and causes of and therapeutic methods for remediating speech and language disorders. Prerequisite: 391-100. W

391-334 Contemporary Theater 2 Cr. Analysis of selected plays; structure, dramatic content and production methods. Prerequisite: 391-100. W

391-336 Stagecraft and Scene Design 2 Cr. Technical problems in producing plays; set design; constructing, painting and handling scenery; stage lighting, makeup, costuming, sound and visual effects, organization of production staff. Prerequisite: 391-100. W

391-338 Play Production 2 Cr. Directing and acting techniques in play production; selecting, rehearsing and producing scenes for class. Prerequisite: 391-100. F

391-349 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

391-449 Cooperative Education Program in Liberal Studies 2-8 Cr. Work and study in an approved position to gain business/industrial/other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. Prerequisite: Consent of instructor or dept chair F-W-S

391-500 Creative Drama For Children 2 Cr. Theory and techniques of developing original dramatizations for children.

391-508 Speech Skills for Business and Industry 2 Cr. Technical speaking; projects in application of speech skills and activities in business and industry. Prerequisites: 391-100 and junior standing. F-W-S

391-512 Speech Skills for Educators 2 Cr. Application of leadership techniques and speech skills in classroom and educational activities; two-way communication as aspect of classroom climate. Prerequisites: 391-100 and junior standing. F-W-S

391-514 Interviewing 1 Cr. Principles and techniques for interviewee in employment interviews. Prerequisite: 391-100. F-W

391-554 Television Programming and Performance 3 Cr. Planning, writing and performing instructional, public service, special feature or dramatic television programs. Prerequisites: 391-100 and junior standing or consent of instructor. F-W



EDUCATION AND HUMAN SERVICES

COUNSELING AND PERSONNEL SERVICES

413-405 Peer Counseling 3 Cr. Laboratory experience will train class participants to be peer counselors and trainees for peer groups that counsel among themselves using skills in listening, giving support and providing alternatives through verbal and non-verbal interaction. F-W

413-444 Introduction to Group Processes 2 Cr. Principles of group processes and the appropriateness of their application in various settings.

413-501 Introduction to Guidance 2 Cr. Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors. F-W-S

413-510 Early Childhood Assessment 3 Cr. Theory and techniques of assessing child development (birth through 8 years) in cognitive, psychomotor and socioemotional areas.

413-571 The Psychology of Marriage and the Family 2 Cr. A study of the interpersonal relations involved in dating, mating, and family collaboration with growing awareness of patterns for self-integration. F-W

413-600 Workshop—Career Trends Affecting the VTAE System 1-3 Cr. Changing career related societal forces affecting the populations attending VTAE schools; Resulting programs and services. Prerequisite: consent of instructor. Repeatable for credit. S

413-629 Guidance in the Elementary School 2 Cr. Nature and conditions of guidance in elementary schools; curricular and non-curricular guidance techniques, referrals, parent counseling; guidance principles and practices applied to elementary school child. F-S

413-647 Behavior Problems of Children 2 Cr. Psychological, social and environmental factors contributing to developing child's behavior; cause and treatment of behavioral disorders in children 3 through 12; methods of observing, diagnosing, documenting and interpreting; underlying behavioral dynamics of problem children. Prerequisite: consent of instructor. W-S

413-648 Learning Disabilities in Young Children 2 Cr. Early recognition through observation and use of screening instruments; general and specific developmental delays in the young child; programming to maximize readiness for academic learning. W-S

413-650 Behavior Problems of Adolescents 2 Cr. Behavior problems of contemporary American adolescents; identification, etiology, intervention and prevention; guidance techniques and processes for teachers, counselors, school psychologists, social service and child care workers, and parents. W-S

413-666 Alcoholism and Family Systems Intervention 2 Cr. The role of alcoholism in the family and how to intervene therapeutically. F-S

413-675 Counseling Theory 2 Cr. Theoretical approaches to counseling: psychoanalytic adaptations, behaviorism, trait-factor, client-centered and others; nature of man, underlying personality theory, goals of counseling, role of counselor and illustrative practical applications in each approach; develop beginning personal theory of counseling. Prerequisite: 413-501. F-W-S

413-694 Counseling Older Persons 2-3 Cr. Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences. S

EDUCATION

421-205 Human Relations for the Helping Professions 2 Cr. An experiential seminar aimed at the improvement of human interaction and the human condition through the development of communication and behavioral skills. F-W

421-280 Reading Improvement 1-2 Cr. Skill instruction in reading study skills. Application of skills to student's textbooks and materials. F-W

421-303 Educational Psychology 2 Cr. Introduction to the psychological aspects of the educative processes. Emphasis on application of basic psychological principles to teaching. Focus on learner, learning process, and the teacher as an agent for change. Prerequisite: 479-110. F-W-S

421-305 Teaching Practicum 2 Cr. Practical experience in developing the prospective teacher's ability in specific well defined teaching skills. Prerequisite: 421-205. F-W-S

421-310 Field Experience - Tutoring 1 Cr. Supervised one-on-one or small group teaching experience in a school or other educational setting in response to the special needs of students with learning difficulties. Emphasis is on precision teaching, individualized instruction, and alternative strategies. Prerequisite: 421-682 or consent of instructor F-W-S

421-311 Field Experience - Mentoring 1 Cr. Supervised one-on-one or small group teaching experience in a school or other educational setting in response to the special needs of high ability students. Emphasis is on critical thinking, problem-solving skills, and creative expression. Prerequisite: 431-595 or consent of instructor F-W-S

421-326 Foundations of Education 2 Cr. Historical background, status, trends, and organization of U.S. education; understandings vital to students before they begin student teaching. Includes professional roles, expectations, rewards and frustrations, resources, control, finance and philosophy.

421-405 Student Teaching 8 Cr. Experience in applying the theories and skills involved in teaching and learning under the guidance of a master teacher in selected off-campus schools. Prerequisites: 421-205, 421-305, 421-536, 421-538, 421-540, 421-641; overall GPA of 2.25; satisfactory Health, Speech and English. F-W

421-406 Intern Teaching 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisites: 421-205, 421-305, 421-536, 421-538, 421-540, 421-641; overall GPA of 2.25; satisfactory Health, Speech and English. F-W

421-408 Introduction to Teaching Strategies 4 Cr. Introduction to general curriculum development, instructional methodology, and evaluation. F-W

421-422 Principles of Secondary Education 2 Cr. The evolution, status, and trends of secondary education. Needs of our democratic society; philosophy, organizational problems, curriculum development, and the responsibilities of the individual teacher as related to students before they begin student teaching. Prerequisite: 479-110. F-W-S

421-438 Curriculum Development 2 Cr. Intensive study and practice of the procedures involved in course construction culminating in a course of study appropriate to the student's major or minor. W-S

421-440 Management of the Learning Environment 2 Cr. Alternative practices and procedures involved in the effective management of the learning environment. Prerequisites: 421-205, 421-538. W-S

421-495 Personal Learning Experience 2 Cr. An experimental program for juniors and seniors. By permission of program directors. Each student selects an area of life which involves ethical decision and investigates that decision-making process. The group enrolled for this experience meets with the directors twice a week for direction, discussion, and criticism. Self-evaluation paper at the close of the course, which is submitted to the critique of the directors and other members of the learning experience. F-W

421-522 Secondary Education Seminar 2 Cr. For post-student teaching, discussion of the evaluation, status, and trends of secondary education. The experiences of the students' teaching related to the needs of our democratic society; philosophy, organization, problems, curriculum development, and the responsibilities of the individual teacher. F-W

421-536 Working With the Culturally Different 2 Cr. Intensive study and practical experience in working with the culturally different. Prerequisite: 421-205. F-W

421-576 Field Experience - Cross Cultural Experience 1 Cr. Supervised one-on-one or small group experience in a school or other setting in response to a special academic or social need with representatives of one or more of the following designated ethnic minority groups—African-Americans, Asian-Americans, Pacific Islander-Americans, American Indians and Hispanic-Americans; and various socio-economic groups, specifically the low-income. Prerequisite: 421-536 or consent of instructor F-W-S

421-577 Instructional Processes 3 Cr. Examine processes utilized in instruction in various content areas. Focuses on methods and techniques for teaching thinking (reasoning), problem-solving, decision-making, and valuing skills. Examines social methods of learning with emphasis on cooperative learning.

421-582 Secondary Reading and Language Development 2 Cr. Effective utilization of reading and language development methodologies in secondary content area classrooms. Prerequisite: 421-303. F-W

421-590 Mental Health in the Schools 2 Cr. A study of the total school community in terms of factors and dynamics contributing to the development or hindrance of the mental health of students, staff, administration, parents. Prerequisite: junior or senior standing.

421-600 Workshop—Special Topics in Education 1-3 Cr. Current specialized topics studied through experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

421-641 Education Evaluation 2 Cr. Testing, the interpretation of tests by means of simple statistical procedures; methods of evaluating educational programs. W-S

421-682 Reading Methods—Secondary School 2 Cr. Technical information on the reading process, self-concept and reading and specific classroom reading problems. Construction of directed reading activities, informal reading inventories, reading study guides, readability checks, SQ32 study skills, vocabulary development and comprehension materials. Prerequisite: junior or senior standing consent of instructor. F-W-S

421-683 Seminar in Reading Methods for Secondary Schools 1 Cr. Selection, research and presentation for discussion of topics related to reading in secondary schools. Prerequisite: 421-682. W

421-685 Psychology of Adult Education 2 Cr. A global view of the philosophy, purpose and practice in various programs of adult education, and an examination of the characteristics of the adult learner plus a profile of his ego, intelligence, and development.

421-690 Learning Style Theory and Application 2 Cr. An introduction to the educational sciences, including cognitive mapping. Emphasis is placed on the practical application of the educational sciences in an educational setting. Prerequisite: junior standing.

SPECIAL EDUCATION

431-480 Student Teaching With Handicapped Youth 8 Cr. Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents. Prerequisites: 431-661 and 431-662, 2.5 GPA in major courses "C" or better in English and speech health certification. F-W

431-481 Student Teaching with Disabled Youth 6.0 Cr. Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents. Prerequisites: 431-518, 431-526, 431-662, 2.5 GPA in major courses "C" or better in English and speech and health approval. F-W

431-501 Learning Disabilities 3 Cr. Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults. W

431-516 Psychology of the Exceptional Child 2-3 Cr. History and treatment of exceptional individuals; characteristics and development of children who deviate from the norm: learning disabled, gifted, mentally retarded, socially and emotionally disturbed, abused, speech and language impaired, and those with visual, hearing, orthopedic and chronic health problems. F-W

431-518 Clinical Experience with the Handicapped 2 Cr. Tutor a handicapped individual in an on-campus or educational setting. To be taken concurrently with 431-561. Repeatable for credit. F-W-S

431-522 Teaching Basic Skills to the Mentally Retarded 3 Cr. Curriculum and instructional techniques for developing basic academic and functional living skills for mild/ moderate mentally retarded youth. Prerequisites: 431-585, 421-304 or Consent of instructor F-W-S

431-524 Career and Vocational Education for the Retarded 3 Cr. Curriculum and instruction for mentally retarded learners in prevocational career, and vocational education stressing interdisciplinary cooperation. Prerequisites: 431-585, 421-304 or Consent of Instructor F-W-S

431-526 Practicum in Special Education 2 Cr. Off-campus work and study in educational settings with handicapped youth. To be taken concurrently with 431-661. Prerequisite: consent of instructor. Repeatable for credit. F-W

431-528 Assessment for Individual Educational Planning 2 Cr. Diagnosing behavior and learning problems of the special needs learner. Prepare individual educational plans. F-W-S

431-555 Issues in Special Education 2 Cr. Current and controversial issues in special education. Prerequisite: 431-532. F

431-559 Curriculum for Mentally Retarded 2 Cr. Program Planning for secondary special education (MR) with specific scope and sequence, learning activities, and evaluation techniques for language arts, math, social sciences, and science. Prerequisites: 421-538, 431-560. F-W-S

431-560 Special Education Methods and Materials 2 Cr. Design, development and content of curriculum for secondary education mentally retarded (EMR) students; materials and methods of presentation. Prerequisite: To be taken concurrently with 431-559. F-W

431-561 Prescriptive Diagnostic Teaching 3 Cr. Develop skills for diagnosis and intervention of behavior and learning problems of the handicapped. Development of and IEP (Individual Education Plan) for handicapped students. Prerequisite: To be taken concurrently with 431-562. Consent of Instructor F-W-S

431-565 Academic Instruction for Mentally Retarded 2 Cr. Techniques and approaches for teaching basic and functional academics to EMR students. Prerequisites: 431-559 and 431-560. F

431-581 Legal Rights of Handicapped 2 Cr. Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. Prerequisite: 431-532. F-W

431-585 Introduction to Mental Retardation 2 Cr. Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons. F-W

431-595 The Gifted Student 2 Cr. Characteristics of gifted, creative and talented individuals; identification in educational settings; social, psychological and educational aspects of providing for the gifted throughout school years.

431-600 Workshop: Topics in Special Education 1-3 Cr. Current specialized topics studied through experiential activities. Prerequisite: approval of instructor F-W-S

431-630 Mainstreaming Special Students 3 Cr. Learning characteristics and behavior of mentally retarded, learning disabled, socially and emotionally disturbed, hearing and sight impaired, orthopedically and chronic health impaired, speech and language impaired students; services mandated by PL94-142, M-team process, and individualized educational plan; instruction of handicapped within regular classes. F-W-S

431-661 Career Education for Handicapped Youth 3 Cr. Techniques for interviewing, planning, and directing school programs in career choice for handicapped adolescents; class activities in community job surveys, work placement and work supervision. Prerequisite: To be taken concurrently with 431-600 F-W

431-662 Classroom Management Techniques 3 Cr. Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning. F-W-S

459-X98 Vocational Rehabilitation Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. Prerequisite: 459-101.

VOCATIONAL REHABILITATION

459-101 Introduction to Rehabilitation 3 Cr. An introduction to serving handicapped and disadvantaged persons. Philosophy, history, legislation, concepts and processes, and careers in rehabilitation services. Special course fee.

459-102 Community Resources 3 Cr. Role of community resources in rehabilitation. Prerequisite: 459-101.

459-201 Basic Skills in Rehabilitation 2 Cr. Development of basic competencies required in most rehabilitation specialties; interviewing, behavioral observation, developing case files, utilizing media materials, report writing and utilizing occupational information. Prerequisites: 459-101 and 459-102. F-W-S

459-205 Rehabilitation Practicum 4 Cr. Direct experience working with handicapped clients and members of the helping professions in rehabilitation settings. Prerequisite: 459-201.

459-230 Psycho-social Aspects of Disabilities 3 Cr. Nature, etiology and methods of dealing with problems of the physically and emotionally handicapped. Prerequisites: 308-220, 459-201 and 479-561.

459-310 Vocational Evaluation 4 Cr. Vocational evaluation methods: work samples, psychometric testing, situational assessment, techniques of job classification and report writing. Prerequisite: 459-201.

459-325 Rehabilitation of the Sensory Disabled 3 Cr. Introduction to the deaf, blind and deaf/blind; methods and techniques of sensory disability rehabilitation. Prerequisite: 459-201.

459-401 Principles and Techniques of Case Load Management 2 Cr. Principles and techniques of implementing case load management in service of clients of state vocational rehabilitation counseling agencies or rehabilitation facilities. Prerequisite: 459-330.

459-402 Rehabilitation Facilities Operation 3 Cr. Principles and practices in rehabilitation facilities operation; knowledge of laws, volunteer programs, budgeting practices and determination of program effectiveness. Prerequisite: 459-201.

459-410 Placement Processes With the Handicapped 3 Cr. Theory and methods of placement techniques for handicapped individuals. Prerequisite: 459-201.

459-413 Vocational Evaluation Seminar 2 Cr. Methods of determining community resources that meet training and job placement needs of rehabilitation client; analyzing jobs in order to develop tools for evaluating rehabilitation client's potential for local training and job placement. Prerequisites: 459-310 and 459-610 or consent of instructor.

459-500 Special Topics in Rehabilitation 1-2 Cr. Special topics not available through regular courses. Prerequisite: approval of instructor Repeatable for credit. F-W-S

459-500k 1 Cr.

459-500J Older Disabled Worker 1 Cr. To understand the developmental stage of later adulthood, its characteristic tasks and how these impact on vocational rehabilitation planning.

459-500K Disabled Mental Health/Chemical Abuse Services 1 Cr. Designed to acquaint mental health and chemical abuse professionals with the magnitude of the unmet need for services for persons with disabilities. Functional limitations of persons with physical and sensory disabilities are reviewed as well as practical techniques for enhancing interacting with persons who are disabled.

459-505 Sign Language I 3 Cr. Basic course in manual communication with the deaf. Intensive practice in expressive and receptive communication. Prerequisite: 459-201 or graduate standing. F

459-506 Sign Language II 3 Cr. Intermediate course in manual communication with the deaf; American Sign Language; increase sign vocabulary and communication speed. Prerequisite: 459-505. W

459-509 Introduction to Biofeedback 3 Cr. Theory and applications of biofeedback in psychology, rehabilitation, medicine and education; in-depth review of the field; appropriate uses of biofeedback as a referral possibility; preparation for supervised clinical biofeedback experience. Prerequisites: 308-132 and 479-110. F

459-510 Clinical Biofeedback Laboratory 3 Cr. Development of clinical skills and familiarization with laboratory monitoring devices and stress management techniques, as they apply to the training of clients in a clinical biofeedback setting. The course also reviews current clinical research, future directions for the field, and ethical considerations. Prerequisites: 308-220, 413-405, 459-509 and consent of instructor. W

459-520 Rehabilitation of the Chemically Dependent 3 Cr. Background in the field of chemical dependency with emphasis on the rehabilitation aspects of the chemically dependent and knowledge of the historical and sociological implications of drug usage. Prerequisites: 459-201 and junior or graduate standing. F-W

459-525 Rehabilitation of the Public Offender 3 Cr. The field of corrections as it concerns the individual and criminal justice institutions; basic legal terms, laws, types of institutions and treatment modalities; treatment effectiveness and trends in criminal justice field. Prerequisites: 459-201 and 479-561 or graduate standing. F-W

459-550 Independent Living 2 Cr. An overview of independent living programs in this country including evolution, goals, methods of service delivery, and program management of ILP. F-W

459-560 Technological Applications: Rehabilitation Services 2 Cr. Applications of technology to assist persons with disabilities in vocational and independent living situations using rehabilitation engineering principles/processes. Review of commercially available aids and assistive devices, and alternative control/interfacing procedures. Introduction to problem solving/design process as related to persons with disabilities.

459-565 Laboratory in Rehabilitation Technology 2 Cr. Experience utilizing technological aids/devices developed for persons with disabilities. Modify/adapt equipment to meet specific functional requirements. Construct switch/ control mechanisms for equipment. Develop prototype solutions to vocational and independent living problems. Prerequisites: 459-560, 170-202, 170-202 or equivalent, or consent of instructor. F-W-S

459-585 Rehabilitation of the Mentally Retarded 2 Cr. Background in mental retardation; vocational evaluation, adult education and adjustment techniques used with mentally retarded adults. Special course fee. Prerequisite: 459-201 or graduate standing. F-W-S

459-587 Handicapped Workers in Business and Industry 3 Cr. Orientation to handicapped workers in business and industry. Focus is upon the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of handicapped workers. Emphasis upon governmental requirements for conformance, linkage between business and rehabilitation, community resources, and staff development. Prerequisite: junior, senior or graduate standing. W

459-601 Rehabilitation in the Private Sector 2 Cr. Introduction to the private-for-profit sector of rehabilitation. Orientation to the contractual services offered by practitioners. Industrial in-plant models will be contrasted to other models for providing rehabilitation services to disabled workers. F-W

459-605 Microcomputer Application for the Handicapped 2 Cr. Use of microcomputer hardware and software to facilitate the development of functional skills of the handicapped. W

459-610 Psychological Testing With Handicapped People 2 Cr. Introduction to psychometric tests; administration, interpretation/scoring and application to handicapped populations. F-W-S

459-661 Forensics for the Rehabilitation Professional 2 Cr. Orientation to terminology and practices associated with private sector rehabilitation. Materials specific to working with insurance/litigation cases. Prerequisite: 308-132. F-W

459-670 Work Adjustment Services 2-3 Cr. Principles and procedures of adjustment services. Emphasis upon the change and improvement of behavior. Supervised practical experience in interviewing, behavior observation, individual work adjustment planning, lesson plan development and report writing. Prerequisite: 459-101, or Graduate standing F-W-S

459-680 Principles of Rehabilitation Counseling 3 Cr. Theory and application of counseling processes in rehabilitation settings. Prerequisite: 479-561 or 431-516. F-W-S

459-682 Sexuality and the Disabled 2 Cr. Programs in sexuality, terms and techniques, exploration of personal biases and development of techniques for dealing with sexuality of disabled individuals. Prerequisites: 459-330, 459-680 or graduate standing. F-W

459-685 Group Processes in Rehabilitation Settings 2 Cr. Theory and application of group processes in rehabilitation settings; direct experience as member and facilitator of a group. Prerequisite: 459-680. F-W-S

459-688 Advanced Job Placement 2 Cr. Job placement methods for individuals with handicaps. Development of Employer Account Systems and the marketing of job placement services. Use of Job Readiness Scales, development of individualized placement plans, and Job Seeking Skills training programs. Current literature and research in job placement will be assigned and discussed. Prerequisite: 459-410 or permission of instructor F-W-S

PSYCHOLOGY

479-X98 Psychology Field Experience 2 Cr. Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.

479-100 Psychology Seminar I—Foundations 1 Cr. An orientation activity for all students in their initial semester as a psychology program student. Information concerning psychology as a discipline, applied profession, and liberal arts program is presented. Career and graduate training opportunities are reviewed. Students continue enrollment in the seminar until they have completed 479-100, 120, 150 and 190 and gained approval for their individual program plan.

479-110 General Psychology 3 Cr. An introduction to psychology as a discipline and applied science. Emphasis is placed on scientific methodology as it is applied to behavior, learning, memory, perception, motivation, development, individual differences, mental health, the physiological basis for behavior, and on the application of psychological principles to human experience. F-W-S

479-120 Psychology—Its History and Systems 3 Cr. Comprehensive survey of history of psychology and basic systems that have developed into modern American psychology. Treatment is given both to philosophic development of psychology and to evolution of psychology as a behavioral science. Emphasis on development of psychology in the 19th and 20th centuries in western Europe and the U.S. with the schools of thought: Structuralism, Functionalism, Behaviorism, Gestalt Psychology, and Dynamic Psychology receiving primary consideration. State of modern psychology is considered; contributions of contemporary psychologists examined. W

479-150 Humanistic Psychology 3 Cr. The course will address the question of "Who am I?" from a contemporary horizon where concerns of psychology intersect biology, philosophy, sociology, anthropology, history and religion. From there we move toward possible answers to man's perennial questions about himself and his future through readings and discussions of key works. The overall objective of the course will be to help the student construct, for himself, a viable answer to the classical question, "Why am I?". F-W

479-190 Psychological Methods I 3 Cr. This course introduces the student to research in the behavioral sciences. Observational, clinical, historical, correlational, descriptive, and experimental techniques are introduced and evaluated. Through the study of contemporary psychological research, the student gains evaluative principles which will enable him to be an intelligent research consumer. F-W

479-251 Child Psychology 3 Cr. A study of the total psychological development of children emphasizing age groups spanning the pre-school and pre-pubescent child and methods for scientific measurement and understanding of child behavior. Prerequisite: 479-110. F-W-S

479-281 Environmental Psychology 3 Cr. Psychological aspects of person/environment interaction. People impacts on environment, and environmental impacts on people. Aspects of recreational environment, population density and stress factors. Prerequisite: 308-122 or 308-150. W

479-300 Psychology Seminar II 1 Cr. The second level of seminar for psychology program students. Activities center on sharing knowledge and experience among faculty and students and on an assessment of the development of program level competencies by students. Prerequisite: 479-100. F-W-S

479-390 Experimental Psychology 3 Cr. This course serves as an introduction to the methodology and content of experimental psychology. This course is built around the concept of behavioral objectives which are used for guiding the learning process, and evaluating that process. Upon successful completion of this course, the student will be capable of formulating a psychological problem, designing an experiment to investigate this problem, planning all aspects of the experimental process, conducting a well-run experiment, analyzing and interpreting results and evaluating the experiment. Prerequisite: 354-130. W

479-400 Psychology Seminar III 1 Cr. The final seminar for psychology program students. Attention is given to the transition to graduate school and/or employment by students. Students develop and conduct an original investigation and report their findings in a formal research paper as a demonstration of their achievement of program competencies. Prerequisite: 479-300. F-W-S

479-451 Children's Learning 3 Cr. Psychological study of basic learning processes in infants and young children. How and why learning occurs and how the course of learning can be modified; discussed from theoretical, research, and practical orientations including simple behavioral responses, concepts and language. Prerequisites: 212-124 and 479-110. F

479-460 Personality and Mental Health 3 Cr. An introduction to the areas of psychology which are concerned with the recognition of the positive principles of mental health and their application to human behavior. In addition, an examination is made of a variety of theories which are representative of the major views of leading thinkers on the subject of personality and personality development. F

479-483 Human Resource Development 2 Cr. Foundation of human resource selection and development in the business and industrial setting. The sub set of personnel management concerned with staffing, orientation, appraisal, development, counseling, and compensating employees constitute the major topics of study. Prerequisites: 479-110 or 479-150 and 150-150. F-W

479-484 Introduction to Behavior Modification 2 Cr. An introduction to the applied analysis of behavior. Emphasis is placed on the fundamentals of behavior modification, models of behavior control, and applications in a variety of settings. Prerequisites: junior standing and at least 3 psychology courses or consent of instructor. W-S

479-530 Psychology of Learning 3 Cr. A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized. F

479-535 Motivation and Emotion 3 Cr. An experimentally oriented introduction to the fundamental principles of motivation and emotion. Prerequisites: 479-110, junior standing and 9 or more credit hours in psychology consent of instructor. W

479-540 Psychology of Individual and Group Differences 3 Cr. Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

479-552 Adolescent Psychology 3 Cr. The physical, emotional, social, moral, and intellectual development of secondary school youth. Prerequisite: 479-110. F-W-S

479-561 Abnormal Psychology 3 Cr. A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied. F-W-S

479-570 Assertive Training Procedures 2 Cr. Training in interpersonal behavior and communications in which persons learn to defend their legitimate rights without violating the rights of others. F-W-S

479-571 Introduction to Health Psychology 3 Cr. Principles of psychology applied to the promotion of health and wellness; prevention of disease, injury and premature death; psychological treatment of illness; improvement of health care; and formation of health policies. Prerequisite: Consent of Instructor (usually requires 10 credits in psychology) W

479-574 Psychology of Women 2 Cr. The myths and stereotypes of early psychoanalytic view of women, critical issues and events of female experience, from prenatal through adulthood; meaning of sexuality, contemporary life styles, and the meaning of aging. Prerequisite: 479-110. F

479-579 Public Relations 2 Cr. Introduction to public relations in industry and education including community relations, employee relations; customer relations, media relations, tools of public relations, two-way communications, and special publics. F-W-S

479-581 Industrial Psychology 2 Cr. A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. Prerequisite: 479-110. F-W

479-582 Human Resource Management 3 Cr. Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation. F-W-S

479-600 Left Brain, Right Brain 2 Cr. Discussion of and experience with a variety of practical applications and personal explanations of right brain - left brain consciousness. Many specific applications to both teaching/learning interactions and personnel management activities. S

479-601 Workshop—Special Topics in Psychology 1-3 Cr. Current specialized topics studied in a small group setting utilizing experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

479-602 Position and Salary Evaluation 2 Cr. The determination of wages and salaries for differing jobs and positions. Legal issues of equal pay for comparable worth. F-W-S

479-632 Perception 3 Cr. This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing. F-W

479-673 Psychology of Stress 2 Cr. Nature of stress and stress-related diseases, stress in daily life, techniques for managing stress, and plans for reducing stress in personal and professional life.

479-675 Right Brain 2 Cr. The two hemispheres of the human brain. Exploration and experience in right hemisphere modes of consciousness, through techniques such as meditation, hypnosis, drawing, guided imagery and dreaming. F-W-S

479-679 Advanced Public Relations 2 Cr. Practice in planning and directing specific public relations programs, using the case problem approach. Prerequisite: 479-579 or consent of instructor

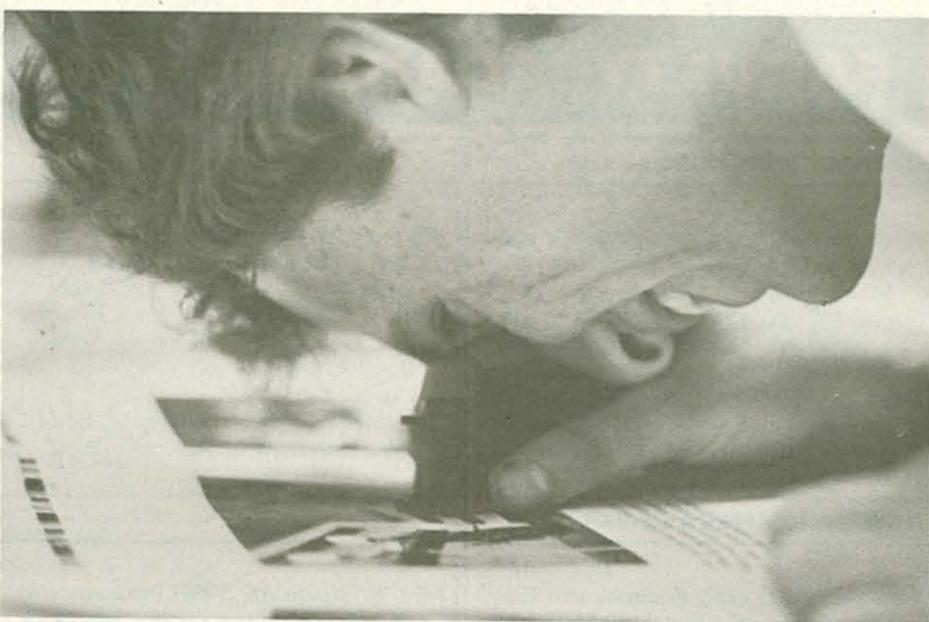
479-690 Psychological Measurement 3 Cr. An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions. W

489-601 Brazelton Neonatal Behavioral Assessment 2 Cr. Philosophy and technique of using the Brazelton Neonatal Behavioral Assessment Scale for evaluating infant personality and development. Prerequisite: Instructor permission F-W-S

TRANSDISCIPLINARY

500-100 Applied Student Leadership 2 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. F-W

500-477 International Studies 1-8 Cr. Interinstitutional Credit Exchange. Students complete educational experiences at recognized/accredited International institutions. The course may be repeated in a given semester or in other semesters. Enrollment is by permission of the Director of International Programs. Prerequisites: sophomore standing, Good standing academically (i.e. 2.00 GPA or more) permission of the Director of International Studies.



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Robert S. Swanson, 1950, Professor and Chancellor, Ph.D., University of Minnesota
 Janice Jordan, 1986, Assistant to the Chancellor, Associate, Presentation Junior College
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Johnson, 1968, Associate Professor, M.B.A., Wisconsin State College at Eau Claire</p> <p>William Kryshak, 1986, Assistant Professor, M.B.A., University of Minnesota</p> <p>Joseph A. Maglio, 1981, Instructor, M.S., University of Wisconsin-Stout</p> <p>George A. Morrison, 1978, Assistant Professor, M.S., Marquette University</p> <p>Maureen R. Munger, 1975, Instructor, M.S., University of Wisconsin-Eau Claire</p> <p>Wayne A. Nero, 1974, Professor, Ph.D., University of Minnesota</p> <p>Ed Smith, 1968, Associate Professor, Ph.D., Michigan State University</p> <p>Ronald Sykes, 1985, Lecturer, M.B.A., University of Minnesota</p>	<p>Dennis Vanden Bloomen, 1983, Lecturer, M.I.D.A., Monterey Institute of International Studies</p> <p>John D. Wright, 1984, Lecturer, M.A.C., Utah State University</p> <p>Materials and Processes</p> <p>Armand G. Hofer, 1964, Professor, and Department Chair, Ed.D., University of Missouri</p> <p>Robert A. 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Degree in Applied Mathematics, M.S., University of Wisconsin-Madison</p> <p>William McGuire, 1982, Assistant Professor, D.A., University of Northern Colorado</p> <p>Dennis J. Mikkelsen, 1980, Associate Professor, Ph.D., University of Wisconsin-Milwaukee</p> <p>Ruth L. Mikkelsen, 1982, Assistant Professor, Ph.D., University of Wisconsin-Milwaukee</p> <p>Richard H. Miller, 1964, Professor, Ed.D., University of South Dakota</p> <p>John C. Neuenfeldt, 1968, Associate Professor, Ed.D., New Mexico State University</p> <p>Loretta J. Robb Thielman, 1983, Assistant Professor, Ph.D., Oregon State University</p> <p>Peter Thielman, 1984, Lecturer, M.S., Oregon State University</p> <p>Karen L. Williams, 1982, Lecturer, B.S., University of Wisconsin-Eau Claire</p> <p>Eileen M. Zito, 1974, Instructor, M.A., University of Illinois</p> <p>Music</p> <p>Dennis J. 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 William P. Burns, 1971, Associate Professor, M.S., University of Wisconsin-Madison
 Kay I. Carter, 1966, Assistant Professor, M.S., Wisconsin State University-LaCrosse
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 Dwain P. Mintz, 1962, Professor, Ed.D., Utah State University
 Terry F. Petrie, 1970, Instructor, M.S., Mankato State College
 Stennet B. Pierce, 1965, Assistant Professor, M.S., University of Wisconsin-LaCrosse
 Michael Ramaeker, 1984, Lecturer, M.S., University of Arizona
 Rita E. Slinden, 1971, Instructor, M.S., Mankato State College
 Robert D. Smith, 1968, Instructor, M.S., Wisconsin State University-LaCrosse
 Steven P. Terry, 1980, Lecturer, M.S., Ball State University
 Michael Wyatt, Lecturer, B.S., Oklahoma Panhandle State University
 John Zuerlein, 1966, Associate Professor, M.S., Stout State University

Physics
 Steven P. Fossum, 1966, Professor and Department Chair, Ph.D., University of Wisconsin-Madison
 Douglas Carlson, 1984, Lecturer, M.S., New Mexico Institute of Mining and Technology
 Robert J. Foley, 1977, Assistant Professor, M.S., University of Wisconsin-Madison
 Allan D. Hilgendorf, 1968, Associate Professor, M.N.S., University of South Dakota
 Mark E. Larchez, 1970, Associate Professor, Ph.D., Texas A & M University
 James A. Pejsa, 1976, Instructor, M.S., University of Wisconsin-Stout
 John T. Rompala, 1981, Sr. Lecturer, Ph.D., Clemson University

Social Science
 Robert E. Evans, 1974, Professor and Department Chair, M.A., University of Montana
 Javed Ashraf, 1984, Assistant Professor, Ph.D., Northern Illinois University
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 Kenneth Kajer, 1969, Instructor, M.A., University of Minnesota
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 Thomas R. Ninneman, 1970, Professor, Ph.D., The University of Wyoming
 Arnold E. Olson, 1964, Associate Professor, M.S., Stout State University
 Bruce Pamperin, 1983, Associate Professor, Ph.D., University of Wisconsin-Madison
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 Lydia Rutkowski, 1966, Associate Professor, M.S., University of Illinois
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Speech and Foreign Language
 Raymond Hayes, 1977, Assistant Professor and Department Chair, M.A., Ball State University
 Marcunne Anderson, 1986, Lecturer, M.A., Mankato State University
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 Dennis R. Griffiths, 1972, Instructor, M.A., University of Connecticut
 Howard S. Heise, 1967, Assistant Professor, M.A., State University of South Dakota
 Arthur Matthews, 1969, Associate Professor, M.A., State University of Iowa
 James Miller, 1985, Lecturer, M.A., Southern Illinois University
 Michael T. Nicolai, 1974, Associate Professor, M.A., University of New Mexico
 Ellen Tomlinson, 1986, Lecturer, M.A., Ohio State University
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School of Education and Human Services
 Paul R. Hoffman, 1964, Professor, Acting Dean, Ed.D., University of Arizona
 Donald J. Stephenson, 1970, Professor and Associate Dean, Ed.D., University of Missouri

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Counseling/Psychological Services
 Carlyle W. Gilbertson, 1969, Professor and Program Director, Ed.S. Degree in Guidance and Counseling and Department Chair, Ph.D., University of Wisconsin-Madison
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 Lee Morical, 1975, Director, M.S., University of Wisconsin-Stout
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 John B. Stevenson, 1966, Professor and Director of International Programs, Ph.D., the Ohio State University
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Education
 Harlyn Misfeldt, 1965, Associate Professor and Department Chair, Ed.S., University of Wisconsin-Stout
 Wesley L. Face, 1957, Professor and Vice Chancellor, Ed.D., University of Illinois
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 Stan Karcz, 1984, Visiting Associate Professor and Director of Corrections Education, Ed.D., Syracuse University
 Dan Paulson, 1983, Assistant Professor, Ed.D., The University of Florida
 Virginia Peter, 1972, Professor, Ph.D., University of Colorado
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 Robert S. Swanson, 1950, Professor and Chancellor, Ph.D., University of Minnesota
 John Van Osdale, 1968, Associate Professor, Director of Continuing Education and Director of the

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 Margaret Wiinamaki, 1973, Assistant Professor, Ed.S., University of Wisconsin-Stout

Psychology
 James Byrd, 1986, Associate Professor and Department Chair, Ph.D., University of Texas
 Thomas Allen, 1970, Assistant Professor and Program Director, B.A. Psychology, M.S., Illinois State University
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 Dennis Bolstad, 1961, Professor, Ed.D., University of Colorado
 Jean Breisch, 1967, Instructor, M.A., University of Minnesota
 Paul Fenton, 1968, Assistant Professor, M.S., Illinois State University
 Mary Flynn, 1983, Lecturer, M.S., University of Wisconsin-River Falls
 Thomas Franklin, 1975, Professor, Ph.D., West Virginia University
 Douglas Gingrich, 1967, Associate Professor, Ed.D., University of Northern Colorado
 Richard Halmstad, 1970, Associate Professor, M.S., University of Wisconsin-Stout
 Louis Klitzke, 1960, Professor, Ed.D., Colorado State College
 Mary Jane Rains, 1975, Associate Professor, Ph.D., University of Toledo
 Michael Ritland, 1964, Professor, Ed.D., University of Northern Colorado
 Reinhard Schmidt, 1967, Assistant Professor, Ed.D., University of South Dakota
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 Mitchell Sherman, 1986, Assistant Professor, Ph.D., University of Minnesota
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Rehabilitation
 Sue A. Schmitt, 1976, Professor and Department Chair, Ed.D., Mississippi State University
 David W. Corthell, 1972, Professor, Ed.D., University of Northern Colorado
 Howard S. Feldman, 1974, Associate Professor, Ed.D., Boston University
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 Thomas A. Modahl, 1973, Professor, Ed.D., University of Northern Colorado
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 Arnold B. Sax, 1969, Professor, Ed.D., University of Houston
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Stout Vocational Rehabilitation Institute
 Paul R. Hoffman, 1964, Professor, Executive Director, Ed.D., University of Arizona
 Christopher A. Smith, 1983, Specialist, Special Assistant to Executive Director, M.S., DePaul University
 Anthony J. Langton, 1970, Assistant Professor, Rehabilitation Engineering Center, M.S., University of Wisconsin-Stout
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 Ronald R. Fry, 1970, Instructor, Assistant Director, Materials Development Center, M.A., University of Wisconsin-Stout
 Darrell D. Coffey, 1967, Professor, Director of Training, Research and Training Center, Ed.D., Auburn University
 Charles C. Coker, 1975, Director of Research, Research and Training Center, Ph.D., Bowling Green State University
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 Karl F. Botterbusch, 1972, Associate Professor, Ph.D., George Washington University
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Learning Resources

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Library Learning Center

John J. Jax, 1959, Associate Professor and Assistant Dean; Director, Library Learning Center, C.A.S., University of Illinois-Urbana

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Instructional Technology Services

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Teleproduction Center

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Academic Computer Services

Gordon G. Jones, 1965, Professor and Director, Academic Computer Services, Ph.D., Washington State University
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Student Services Division

Samuel E. Wood, 1964, Professor, Assistant Chancellor and Dean of Students, M.A., University of Iowa
Helmut Albrecht, 1963, Executive Director of Auxiliary Services, B.S., Stout State College
Richard Anderson, 1967, Professor and Dean of Counseling Services, Ed.D., Colorado State College
Harry Aubert, 1983, Director of Residential Dining Services, B.S., University of Montana
Patsy Barnes, 1982, Program Coordinator, M.S.Ed., University of Wisconsin-Platteville
Mike Becker, 1986, Residence Life Director, B.S., University of Wisconsin-Stout
Gayle M. Bock, 1982, Specialist
Joseph Brown, 1970, Assistant to Executive Director of Auxiliary Services, B.A., Stout State University
Barbara Burdick, 1980, Assistant to Director, B.A., Metropolitan State University, Minneapolis-St. Paul
Anne Buttke, 1984, Specialist, B.S., University of Wisconsin-La Crosse
Robert Christoffel, 1984, Residence Life Director, B.S., University of Wisconsin-Stevens Point
Robert Dahlke, 1969, Assistant Professor and Director, Career Planning and Placement, M.S., Stout State University
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Allen R. Ebel, 1986, Alcohol and Other Drug Abuse Coordinator, M.S., University of Wisconsin-Stout
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Jon Fuller, 1979, Director of Facilities Management, B.S., University of Wisconsin-Stout

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R. Pinckney Hall, 1969, Professor and Counselor, Ph.D., Northwestern University
Robert Hoyt, 1967, Professor and Counselor, Ph.D., Northwestern University
Joan Hughes, 1963, Director of Student Records
Diane Iverson, 1984, Specialist/Director, ASPIRE, M.S., University of Wisconsin-Stout
Cynthia S. Jenkins, 1977, Assistant Director of School Relations, M.S., University of Wisconsin-Stout
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Robert Johnson, 1969, Instructor and Director of Memorial Student Center, M.S., Stout State University
Charles Kell, 1969, Assistant Professor and Director of School Relations, Ed.S., University of Wisconsin-Stout
Kurt Kindschi, 1981, Director of Financial Aid, M.S., Wisconsin State University-Platteville
Allen Klink, 1966, Assistant Professor, M.S., Wisconsin State College at La Crosse
Betty Klotz, 1984, Head Resident, B.S., University of Wisconsin-Stout
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Joe Krier, 1976, Specialist, B.S., Wisconsin State University-La Crosse
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Joseph Larkin, 1966, Professor and Associate Dean of Students, Ed.D., Oklahoma State University
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Sharon Miller, 1986, Career Specialist, Ethnic Services
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William Porter, 1980, Specialist, B.A., University of Wisconsin-Madison
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Administrative Services Division		
Wesley S. Sommers, 1956, Professor and Assistant Chancellor, Ph.D., University of Minnesota James W. Freer, 1974, Deputy Assistant Chancellor and Controller, M.B.A., University of Wisconsin-Oshkosh Annette M. Taylor, 1980, Assistant to Assistant Chancellor, B.S., University of Wisconsin-Stout Glen R. Schuknecht, 1970, Associate Professor, Director of Management Information Systems and Director of Administrative Computing, M.S., University of Wisconsin-Madison	Bob L. Chiodo, 1987, Associate Director of Computing Services, M.B.A., Baldwin-Wallace Rex F. Patterson, 1985, Systems Analyst, M.B.A., University of Wisconsin-Stout Daniel Newhall, 1978, Director of Physical Plant, B.S., University of Wisconsin-Madison J. Wayne Argo, 1985, Director of Personnel, B.A., University of Missouri-St. Louis Garold L. Buckley, 1966, Director of Protective Services	Diane M. Moen, 1978, Assistant Controller and Director of Budgeting Services, M.B.A., University of Wisconsin-Eau Claire Mark Skutley, 1986, Director of Purchasing, M.B.A., University of Wisconsin-Eau Claire Howard J. Slinden, 1974, Director of Student Business Services, M.A., Michigan State University
Emeriti		
Dr. Dwight Agnew, Dean Emeritus, Professor Emeritus, 1977 Dr. Herbert A. Anderson, Dean Emeritus, Professor Emeritus, 1980 Mrs. E. Anderson, Professor Emeritus, 1964 Dr. Orlin Anderson, Professor Emeritus, 1980 Mr. Reed Andrae, Instructor Emeritus, 1987 Mr. Herman Arneson, Associate Professor Emeritus, 1976 Mr. Robert Behling, Associate Professor Emeritus, 1986 Mr. Frank Belisle, Professor Emeritus, 1970 Miss Phyllis Bentley, Associate Professor Emeritus, 1970 Mrs. Caroline Bosworth, Faculty Emeritus, 1975 Dr. Lois Byrns, Professor Emeritus, 1977 Miss Gertrude L. Callahan, Professor Emeritus, 1961 Dr. Robert Cameron, Professor Emeritus, 1977 Miss Clara Garrison, Associate Professor Emeritus, 1975 Dr. Donald Clausen, Professor Emeritus, 1980 Miss Mary Frances Cutnaw, Associate Professor Emeritus, 1974 Mr. Edwin W. Dyas, Associate Professor Emeritus, 1980 Mr. Paul Edmondson, Assistant Professor Emeritus, 1985 Dr. Orazio Fumagalli, Professor Emeritus, 1986 Dr. John Furlong, Professor Emeritus, Assistant to the Chancellor Emeritus, 1985 Mr. Edward Gold, Associate Professor Emeritus, 1983 Dr. Harold Halfin, Professor Emeritus, 1986 Miss Margaret Harper, Associate Professor Emeritus, 1970	Mr. Leonard Helgeson, Instructor Emeritus, 1980 Dr. Marybelle Hickner, Professor Emeritus, 1984 Mr. Richard Hoffman, Instructor Emeritus, 1985 Dr. Veryle Homuth, Associate Professor Emeritus, 1985 Dr. John Houle, Professor Emeritus, 1985 Dr. Ralph Iverson, Assistant Chancellor Emeritus, Professor Emeritus, 1973 Miss Lillian Jeter, Professor Emeritus, 1961 Ms. Eleanor Johnson, Assistant Professor Emeritus, 1987 Mr. Ray C. Johnson, Professor Emeritus, 1969 Dr. Mercedes Kainski, Professor Emeritus, 1985 Miss Mary Killian, Professor Emeritus, 1967 Mr. Dick G. Klatt, Associate Professor Emeritus, 1978 Mr. Ray Kranzusch, Professor Emeritus, 1964 Dr. Lorna Lengfeld, Professor Emeritus, 1973 Dr. Edward Lowry, Professor Emeritus, 1983 Dr. Daniel Magnussen, Professor Emeritus, 1985 Miss Ella Jane Meiller, Professor Emeritus, 1973 Mr. Robert Melrose, Associate Professor Emeritus, 1987 Dr. Marcia Metcalf, Professor Emeritus, 1986 Dr. William J. Micheels, Chancellor Emeritus and Distinguished Professor Emeritus, 1977 Mr. Edward Morical, Associate Professor Emeritus, 1985 Dr. Otto Nitz, Professor Emeritus, 1971 Miss Ann Noble, Professor Emeritus, 1962 Dr. Erich Oetting, Dean Emeritus, Professor Emeritus, 1969	Mr. Harry B. Olstad, Associate Professor Emeritus, 1980 Ms. Charlotte Orazem, Assistant Professor Emeritus, 1980 Dr. William H. Owen, Professor Emeritus, 1982 Dr. Cecelia Pudelkewicz, Professor Emeritus, 1981 Mr. Matthew Reneson, Assistant Professor Emeritus, 1982 Dr. Jane C. Rosenthal Reynolds, Professor Emeritus, 1983 Dr. Evelyn G. Rimel, Professor Emeritus, 1979 Ms. Charlotte L. Rose, Associate Professor Emeritus, 1980 Dr. E. Robert Rudiger, Professor Emeritus, 1982 Mr. John Sabol, Associate Professor Emeritus, 1976 Mr. Morrell Solem, Assistant Professor Emeritus, 1984 Dr. Charles Thomas, Professor Emeritus, 1985 Mr. Louis Tokle, Associate Professor Emeritus, 1986 Dr. Mildred Turney, Professor Emeritus, 1975 Dr. Helen Van Zante, Professor Emeritus, 1975 Mrs. Alyce Vanek, Associate Professor, Emeritus, 1974 Ms. Betty Viens, Assistant Professor Emeritus, 1984 Mr. Lloyd Whydotski, Associate Professor Emeritus, 1975 Mrs. Myrtis L. Whydotski, Instructor Emeritus, 1982 Dr. Theodore E. Wiehe, Professor Emeritus, 1982 Miss Mary K. Williams, Professor Emeritus, 1970 Ms. Freda M. Wright, Associate Professor Emeritus, 1978 Dr. Norman C. Ziemann, Professor Emeritus, 1979